MARCH 10, 1922

THE RUBBER AGE

VOL. X. NO. 11

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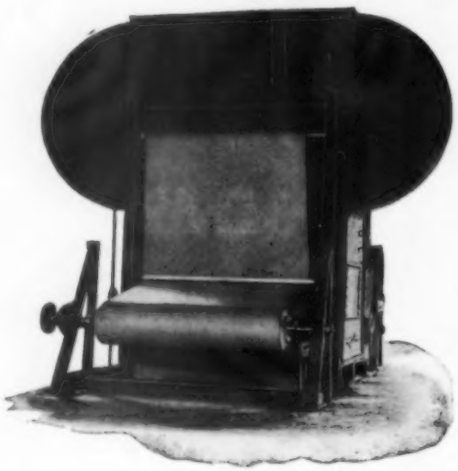

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TREASURER

VOL. X MARCH 10, 1922 No. 11

Canadian Rubber Men Meet

Rubber Association of Canada Elects New Officers and Directors at Second Annual Meeting Held at Windsor Hotel, Montreal, Tuesday Afternoon and Evening, February 14

THE Second Annual Meeting of the Rubber Association of Canada was held at the Windsor Hotel, Montreal, on the afternoon of Feb. 14, 1922, and was followed by a banquet in the evening. Both functions were presided over by C. H. Carlisle of the Goodyear Tire & Rubber Co., of Canada, who has been president of the association for the past two years.

At the banquet the principal speeches were made by Mr. Carlisle, Hon. A. B. Copp, Secretary of State for Canada, and the Rev. George Adam of Montreal. About one hundred and seventy-five guests sat down to the dinner which was served in the Rose Room of the Windsor Hotel.

At the annual meeting the directors elected for 1922 were C. N. Candee, Gutta Percha & Rubber Limited, Toronto; John Westren, Dunlop Tire & Rubber Goods Co., Ltd., Toronto; W. A. Eden, Canadian Consolidated Rubber Co., Ltd., Montreal; R. F. Foote, Independent Rubber Co., Ltd., Merritton; W. H. Miner, Miner Rubber Co., Ltd., Granby, Que.; F. E. Partridge, The F. E. Partridge Rubber Co., Ltd., Guelph, Ontario; and A. R. Kaufman, Kaufman Rubber Co., Ltd., Kitchener, Ontario. C. H. Carlisle, past president, becomes an ex-officio director.

Officers for 1922 chosen by the board were: W. A. Eden, president; C. N. Condee, vice president; John Western, treasurer; C. H. Carlisle, assistant-treasurer; A. B. Hannay, manager and secretary.

The manager's report stated that the Canadian rubber companies had come through a rather difficult business year with considerable success and the prospects were good for a steady improvement of the business of Canadian rubber manufacturers.

W. A. EDEN, NEWLY-ELECTED PRESIDENT
Canadian Consolidated Rubber Co. Ltd., Montreal

His report also showed that the Association had been active throughout the year. It had collected statistics with a view of providing the Canadian Government with accurate information in the event of legislation affecting the rubber industry being proposed. It had also obtained a judgment from the Canadian Railway Commission reducing the classification on tires moving in carlots. It had given attention to the employment situation; had formulated proposals for a reduction of the volume of tire adjustments; and had collected useful statistics upon tire production and sales.

The meeting decided that the association should undertake the compilation of statistics of rubber footwear and mechanical goods.

Census figures were given showing the value of rubber goods manufactured in Canada in 1920 to have been $80,717,000 of which $40,716,000 were tires and tubes; footwear, $24,332,000; belting, $3,101,000; and hose, $1,182,000. Tires and tubes were exported to the value of $11,000,000, and footwear $1,632,000.

A resolution was adopted changing the by-laws so as to permit the directors to transfer association memberships where a firm member's interest is transferred by sale or otherwise.

The question of sales taxes was considered, and it was decided that the Canadian Government should be urged to exempt from such taxes sales by manufacturers to wholesalers and sales by wholesalers to other wholesalers, but that a 3 per cent sales tax should be collected upon sales by manufacturers and wholesalers to retailers or consumers; and that the manufacturer or wholesaler should not be allowed to absorb any part of such tax, but that it be invoiced as a separate charge to be added separately to the selling price.

A vote of thanks was passed to C. H. Carlisle, the retiring president, for the splendid work he had accomplished during the two years he had been at the head of the association.

In his speech at the banquet, Hon. A. B. Copp expressed his gratitude to the rubber industry for having so ably assisted in the recent Canadian election, which resulted in the return of the new ministry of which he was a member. He said that at least three-quarters of the voters went to the polls on pneumatic tires. Previously he had not been aware of the importance of the Canadian rubber industry, which he had just learned produced goods to twice the value of those produced by the agricultural implement manufacturers of Canada. He would have much pleasure in calling the attention of the Finance Minister to the importance of this industry, and had no doubt it would receive his attention when new taxation laws were being enacted.

Rev. George Adam expressed surprise and pleasure with the statement of the chairman that the prices of rubber goods in Canada were now 41 per cent below pre-war figures. It struck him that there must be honesty in this business. He was glad to learn of this, because without honesty in business there could never be real prosperity.

List of Those Present at Annual Meeting

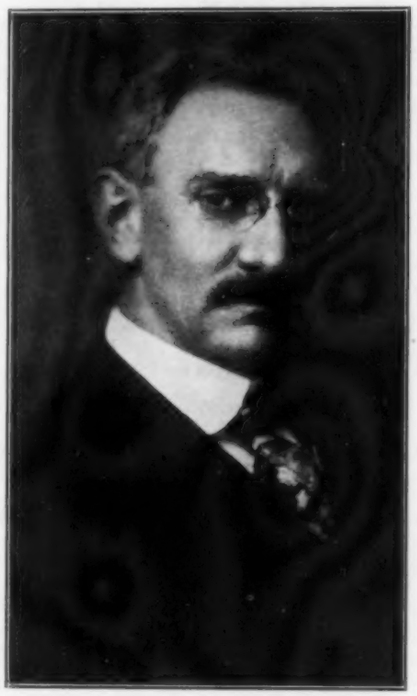
Those present at the Annual Meeting were:
W. A. Eden, Dominion Tire Co., Ltd.
J. A. Connor, Merchants Rubber Co., Ltd.
G. W. Charles, Canadian Rubber Co., Ltd.

W. Binmore, Columbus Rubber Co., Ltd.
A. D. Thornton, Canadian Consolidated Rubber Co., Ltd.
C. H. Carlisle, Goodyear Tire & Rubber Co., Ltd.
P. W. Litchfield, Goodyear Tire & Rubber Co., Ltd.
R. P. D. Graham, Goodyear Tire & Rubber Co., Ltd.
H. C. Lower, Goodyear Tire & Rubber Co., Ltd.
G. L. McCrea, Goodyear Tire & Rubber Co., Ltd.
D. J. McCarthy, Goodyear Tire & Rubber Co., Ltd.
H. W. Schultz, Goodyear Tire & Rubber Co., Ltd.
M. J. Smith, Goodyear Tire & Rubber Co., Ltd.
A. R. Kaufman, Kaufman Rubber Co., Ltd.
T. H. Rieder, Ames Holden Tire Co., Ltd.
C. N. Candee, Gutta Percha & Rubber, Ltd.
W. H. Galt, Gutta Percha & Rubber, Ltd.
R. F. Foote, Independent Rubber Co., Ltd.
Hugh Bullock, Independent Rubber Co., Ltd.
F. E. Partrdige, F. E. Partridge Rubber Co., Ltd.
W. H. Miner, Miner Rubber Co., Ltd.
J. B. Maus, Oak Tire & Rubber Co., Ltd.
J. D. Hathaway, Northern Electric Co., Ltd.
G. W. Holme, K. & S. Tire & Rubber Goods, Ltd.
J. D. Murray, K. & S. Tire & Rubber Goods, Ltd.
A. E. King, Dunlop Tire & Rubber Goods Co., Ltd.
McA. Campbell, Dunlop Tire & Rubber Goods Co., Ltd.
P. O. Halin, Jenckes Canadian Co.
H. J. Fisk, Jenckes Canadian Co.
A. Manchester, Meyer & Brown, Inc.
B. W. Henderson, F. R. Henderson & Co., Inc.
R. H. Spurr, Imperial Oil, Ltd.
Robert L. Rice, Hood Rubber Co.
J. I. Frank Anthes, Montreal .
A. Thayer, Lebanon Mills, Pawtucket, R. I.
A. B. Hannay, Manager and Secretary.

Members and Guests Present at Second Annual Banquet

At the President's Table

C. H. Carlisle, Toronto; Hon. A. B. Copp, Ottawa; Rev. George Adam, Montreal; W. A. Eden, Montreal; C. N. Candee, Toronto; W. H. Miner, Montreal; F. E. Partridge, Guelph; A. R. Kaufman, Kitchener; R. F. Foote, Merritton, P. W. Litchfield, vice president of the Goodyear Tire & Rubber Co., Akron, Ohio.



C. H. Carlisle, Past President
Goodyear Tire & Rubber Company of Canada, Ltd.

At Other Tables

W. M. Angus, Montreal; J. I. Frank Anthes, Montreal; W. H. Allworth, Montreal; S. G. Amero, London; R. W. Ashcroft, Montreal.

C. F. Bliss, Ansonia, Conn.; J. G. Barrow, Montreal; J. C. Blanchard, Granby; W. Binmore, Montreal; W. S. Burrill, Hamilton; G. Bergeron, Montreal; Hugh Bullock, Malden, Mass.; W. F. Bilger, Montreal; C. W. Boyer, Montreal; G. R. Beharriell, Montreal; Mr. Bending, Montreal.

G. W. Charles, Montreal; E. E. Code, Ottawa; J. A. Connor, Montreal; Captain Coleman, Granby; N. M. S. Carroll, Montreal; George Collins, Granby; R. J. Caldwell, New York; G. C. Clark, Windsor; J. C. Caldwell, New York; Vincent Cooke, Guelph; McA. Campbell, Toronto.

A. S. Dickinson, Toronto; T. F. Davies, Montreal; A. F. Dwyer, Guelph; N. M. Davison, Montreal; George A. Dobbie, Galt; J. M. Doyle, Montreal; A. E. Doig, Montreal; N. F. Dunham, Montreal; J. Daoust, Montreal.

J. H. Frye, Montreal; R. S. Fuller, New York; A. D. Fisher, Montreal; Fred F. Foote, Merritton; J. H. Fortier, Montreal, H. J. Fiske, Drummonville; H. L. Fuller, Boston; Franklin Farrel, Jr., Ansonia, Conn.

W. H. Galt, Toronto; H. G. Green, Ottawa; R. H. Green, Toronto; A. B. Greanough, Hamilton; R. P. D. Graham, Toronto.

B. W. Henderson of F. R. Henderson & Co., New York; Col. P. R. Hanson, Montreal; C. C. Hopper, New York; E. G. Horne, Montreal; A. B. Hannay, Toronto; J. D. Hathaway, Montreal; H. R. Hamilton, Toronto; O. H. Hymmen, Montreal; G. W. Holme, Toronto; P. O. Halin, Drummondville; L. B. Hutchison, Toronto; W. A. Hunter, Merritton; J. C. Howard, Kitchener; Norman Howie.

A. E. Jackson, Montreal, Paul Joubert, Montreal, J. E. Jones, Montreal.

J. H. S. Kerr, Toronto; I. W. Killam, Montreal; A. E. King, Toronto; J. J. Kiezwetter, Montreal; F. W. Knowlton, Montreal; Mr. Knibbs, Montreal; A. L. Kenny, Montreal.

J. H. Linteau, Montreal; J. G. Lane, Toronto; Emil Larose, Montreal; H. C. Lower, Toronto; O. Labelle, Montreal; L. E. Levey, Toronto; R. E. Lyons, Montreal; W. H. Lucking, New York; John S. Lowman of the Philadelphia Rubber Works Co., Akron, Ohio; W. O. Lewis, Granby.

R. R. Macauley, Montreal; J. B. Maus, Toronto; F. Maranda, Montreal; James Miln, Toronto; F. H. Meinzer, Montreal; D. J. McCarthy, Toronto; G. H. Montgomery, Montreal; J. A. Martin, Montreal; G. L. McCrea, Toronto; Chas. F. Medbury, Montreal; J. D. Murray, Toronto; John Myles, Montreal; W. T. Mayo, Hamilton; W. J. McNally, Montreal; A. Manchester, Jr., of Meyer & Brown, New York; H. G. McCullum, Montreal; Joseph F. McLean of the Pequanoc Rubber Co., Butler, N. J.; Maj. Fred McKean, Montreal; Jos. Maton, Granby.

H. R. Nixon, Montreal; H. P. Nellis, Montreal.

T. Y. O'Neill, Montreal.

E. W. Post, New York; Henry Perlish, New York; Fred B. Peterson, New York; M. K. Pike, Montreal; N. O. Philps, Montreal; Mr. Parker Montreal.

R. L. Rice of the Hood Rubber Co., Boston; J. H. Rowe, Montreal; J. H. Robertson, Toronto; J. C. Rudolph, Montreal; H. H. Replogle, New York; T. H. Rieder, Montreal; R. B. Reid, Montreal; R. N. Redmond, Montreal.

R. H. Spurr, Toronto; P. A. Stephenson, Montreal; H. J. Scott, Toronto; H. W. Soper, Montreal; M. J. Smith, Toronto; A. H. Steen, Montreal; W. H. Schultz, Toronto; P. Y. Smiley, Montreal; J. T. Stuart, Pembroke; W. E. Shean, Montreal; E. A. Sherwood, Ottawa; F. A. Scott, Montreal.

A. D. Thornton, Montreal; L. H. Thomas of Poel & Kelly, New York; F. A. Todd, Montreal; P. A. Thompson, Montreal; W. A. Traill, Montreal; S. W. Tilden, Montreal; A. Thayer, Pawtucket.

Theodore Wood, New York; S. Casey Wood, Toronto; Donald Worth, New York; E. E. Williams, Toronto; Chas. E. Wood, New York; W. B. Wiegand, Montreal; W. E. Wing, Kitchener; Hugo Wellin, Montreal; George Wilson, Montreal; A. H. Wellein, Montreal.

W. A. Youngblud, Montreal.

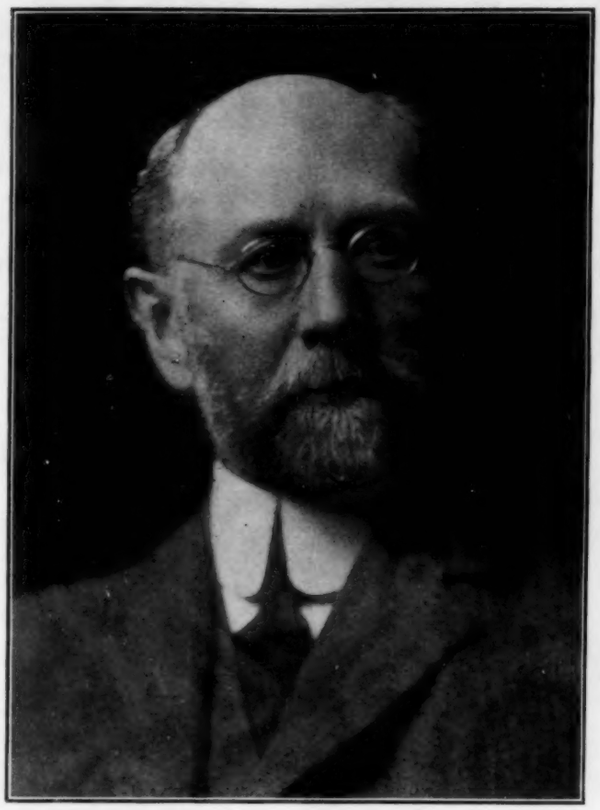
Report of the Manager and Secretary

The report of A. B. Hannay, manager and secretary of The Rubber Association of Canada is reproduced in part as follows:

In presenting his Second Annual Report, your Manager at the opening desires to congratulate the various companies upon the success with which they have come through an exceedingly difficult business year. Decline of values in rubber and fabrics created grave problems for companies holding

substantial quantities of materials or such as were heavily committeed by contracts. Surprising strength has been shown by the manner in which Canadian rubber companies were able to absorb losses upon their materials and manufactured stocks, and also to adjust themselves to a decline in demand for their products, resulting chiefly from serious shrinkage in the purchasing power of the Canadian buying public. Confusion which developed in the great rubber industry of the United States complicated the Canadian problem. However, the strength, energy and resourcefulness of Canadian companies, and the excellent quality of their products, enabled them to remain in control of the domestic market and continue their substantial operations in the export field. The outlook for the future appears to warrant expectation of steady improvement for the Canadian rubber business, both at home and abroad.

... Few, if any changes in the Tariff are expected to be brought down in the Budget of the approaching session of Parliament which opens early in March. Hon. Mr. Fielding has come back to the Finance portfolio, to find the Fielding Tariff of 1907 still in operation, as it was when he left office in 1911, and he is unlikely to undertake his third general tariff revision without the same sort of an enquiry that preceded his two previous revisions. Therefore a Tariff enquiry may be expected sometime after the close of the approaching session and, possibly, the Budget of 1923 may give effect to a new tariff.



C. N. Candee, Vice President, Rubber Association of Canada
Gutta Percha & Rubber Ltd., Toronto, Ont.

John Westren, Treasurer
Dunlop Tire & Rubber Goods Co. of Canada, Ltd.

An application for readjustment of freight classification on tires was refused by the Canadian Freight Association. The Rubber Association therefore decided to make an appeal to the Dominion Railway Board. A great deal of care was given to the preparation of a case, many meetings of the Traffic Committee being held. The case was presented to the Railway Board by your Manager and was opposed by the Canadian Freight Association. The judgment of the Railway Commission was favorable to the Rubber Association. Tires moving in carloads were reduced one class and wire-bound bundles of tires in less than carlots were placed on the same footing as crated tires. This decision put the Canadian tire manufacturers on a freight equality with United States tire producers and resulted in a considerable freight economy. The decision supplements the rubber footwear freight classification previously obtained, and enables the mixing of tires, footwear and other rubber articles.

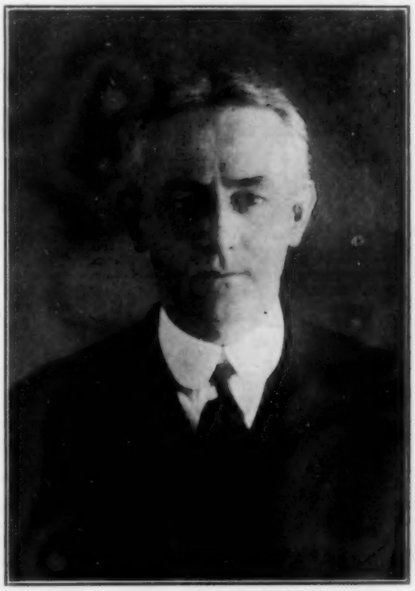
... Your Manager presented to the Board of Customs a carefully prepared case upon the application of an automobile company for a ruling designed to facilitate the importation of tires for equipment. The ruling asked for was not obtained by the car maker.

Consideration has been given to the employment situation and a number of rubber companies have arranged the direct exchange of information with neighboring companies for the purpose of equalizing conditions and benefiting both labor and themselves.

... It is expected that arrangements may be completed for the compilation of Association figures upon Canadian footwear inventories, production and sales, similar to those now being compiled upon tires. Such figures are now gathered each year by the Federal Census Department but they are issued so late that they prove of little use to the rubber footwear manufacturer who desires to have a close survey of the footwear situation to assist him in planning future production.

... Consideration has been given to the highway improvement movement from which the tire industry should derive substantial benefit and a financial grant by tire companies has been recommended in aid of the work of the Canadian Good Roads Association, which has effectively specialized in highway improvement for all parts of the Dominion.

The office of the Association is becoming a clearing house for information bearing upon the rubber industry and is daily called upon by members for a wide variety of information, especially upon such subjects as freights, customs and taxation.



A. B. Hannay
Manager and Secretary of the Rubber Ass. of Canada

A. R. KAUFMAN, DIRECTOR
Kaufman Rubber Co. Ltd., Kitchener, Canada

The present year will probably see the completion of a new classification of Canadian Freight Schedules. The work of revising the present freight classification, Number Sixteen, has been under way for some time, and the Association has been informed that the rubber items of the new Classification, Number Seventeen, are soon to be reached for discussion. Your capable Traffic Committee will be prepared to look after the interests of the Rubber Industry both before the Canadian Freight Association and afterward before the Railway Commission when called upon by the body which has been entrusted with this task.

The Association is completing a statistical survey of the Canadian rubber industry for the past two years, in order to be in a position to discuss any legislation affecting its members that may be brought forward.

In conclusion the Manager desires to express his thanks for the cooperation and support he has received in his work from all members of the Association, and his confident belief that this cooperation will be continued.

The Financial Statement

The financial statement, submitted by E. W. Elkington, accountant, showed that receipts for the year were $13,701.57, and the total disbursements $12,068.86, leaving a balance of $1,632.71, cash on hand on January 30, 1922.

1920 Figures of the Canadian Rubber Industry

(Prepared by The Census Bureau)

	No.	*Value*
Automobile tires manufactured	1,561,824	$35,175,801
" tubes "	1,427,546	4,271,461
" solid tires "	21,444	729,857
Bicycle tires "	241,890	428,979
Motor Cycle Tires "	15,172	154,556
		$40,760,654
Rubber footwear of all kinds, prs.	17,057,059	$24,332,320
" belting " ft.	3,727,230	3,101,412
" hose " ft.	4,067,694	1,882,518
Capital, (Land, buildings, machinery tools,) (materials, cash, accounts, etc.)		58,370,039
Factory officers and employees	15,311	
Salaries and wages of above,		16,222,087
Rubber used, lb.	32,816,758	13,620,122
Cotton used,	11,587,719	19,491,367
Chemicals used,		2,548,471
Total materials used		41,838,200
Fuel used,		321,565
Average daily power used, hp.	38,601	
Repairs		1,427,895
Rubber imported (crude, hard, scrap (and reclaimed) lb.	32,730,170	13,738,205
Pneumatic tires & tubes imported,		2,545,964
do do exported,		11,043,255
Footwear imported		328,453
do exported		1,632,679
Total Rubber Goods produced in Canada in 1920		$80,717,308

Burke Electrical Retreading Process Now a Commercial Success

In 1915 W. B. Burke discovered that when his tires were worn beyond any further usefulness, actually only ten to fifteen per cent of the material which the manufacturer had put into the tire had been consumed. In other words, if the remaining materials could be utilized, and a new tread be properly built on the carcass, there would be a big saving of materials.

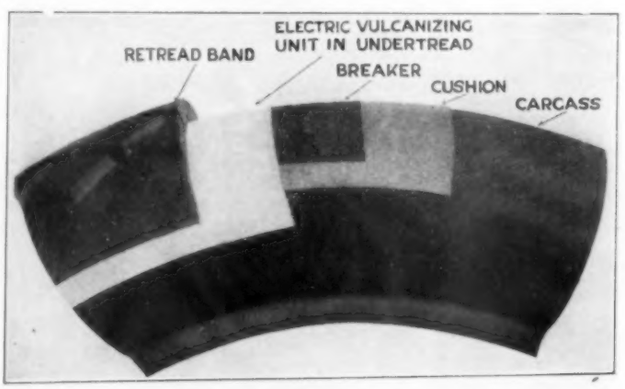
The big difficulty with all retread work, of course, has been due to the fact that heat must pass through portions of the tire which had already been vulcanized, and could therefore stand no more. This suggested to Mr. Burke the localization of heat, and he naturally turned his thoughts to electricity as the only means by which heat could be so confined and localized so that it would not affect those portions of the casing which would be harmed by further heating or curing.

The facilities of the Goodyear experimental department were thrown open to Mr. Burke. With the assistance of members of the department, rapid progress was made and electrical retreading is now pronounced a success.

The mechanical features of the process are in no way similar to those of the usual retreading work, done with steam. A very fine wire, of the proper alloy, acting as a heating element, mechanically spaced to give a uniform temperature which, when current is passed through, localizes heat to raw gums which are necessary to make a union between tread and carcass. This current is automatically controlled which in turn automatically controls temperature. By an ingenious device attached to a time clock, current is automatically cut off and an alarm sounded, notifying the operator that the operation is completed. Other operations are much the same as those used in steam work.

Electrical retreading work is now being done by sixteen licensed plants, scattered over the country. Other licenses will be granted in territories where there is sufficient work to be done, preferably in the larger cities. As a considerable outlay of equipment is necessary, only those dealers who operate large repair plants will be able to handle the work. These plants will act as wholesalers of the retreading, and will work with other dealers in their territories.

The parent company, formed by Mr. Burke and his associates is called the Electric Vulcanizing Rubber Co., with offices in Cleveland. In the past Mr. Burke's company has manufactured only the electrical vulcanizing unit, which has been marketed exclusively through the Goodyear Tire & Rubber Co., who also supplied dealers with the balance of the material necessary for the work. Recent developments of the company however, have increased production facilities, and in the future not only the electrical vulcanizing unit will be manufactured but all other material incident to the work, which will be marketed by the company direct, and through several of the large tire manufacturers.



SECTION OF TIRE SHOWING ELECTRIC VULCANIZING UNIT IN UNDERTREAD

Removing Iron Particles in Reworking Rubber

The Principles of Construction of Various Types of Electromagnetic Separators

By Ismar Ginsberg, B.S., Ch.E.

A VERY essential step in the process of reclaiming or regenerating rubber is the removal of the pieces of iron that are intimately mixed with the finely ground rubber. The most logical way to carry out this separation is to take advantage of the magnetic properties of iron, or in other words to eliminate the iron from the rubber by passing the mixture over electromagnets, which attract the iron but allow the rubber to pass by. The use of the electromagnet to separate iron from a mixture is by no means a new development, and wherever it has been used it has always been successful. For example,

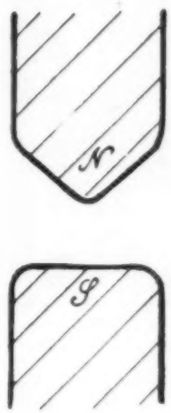


FIG. 1

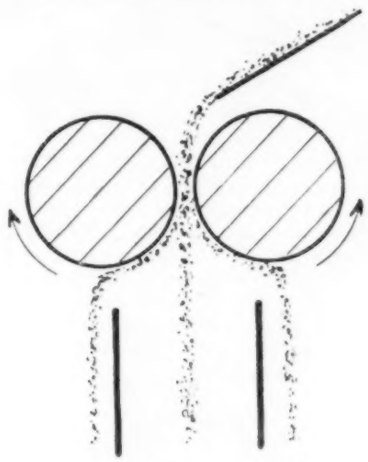


FIG. 2

in grinding coal for use in the cement kiln, it is extremely important that all iron be removed from the coal before it goes into the grinders. Otherwise there will be danger of sparks being formed when the iron strikes up against the teeth of the grinder, with resultant ignition of the fine coal dust and explosion. The iron is removed from the coal by passing the mixture over electromagnets. Other applications have been made of this process in foundries and metal working plants. Its use in the rubber mill has been just as effective as in the other industries.

In this article there are shown several methods of attaining the magnetic effect, and the advantages and disadvantages of each are discussed. Generally speaking, we recognize two sorts of materials as far as their behavior under the electromagnet is concerned, that is, the magnetic materials and the non-magnetic. The former are attracted by the magnet and the latter are not. However, there are degrees of magnetization, and different substances possessing different degrees of magnetizability may likewise be separated into groups, corresponding to these degrees just as non-magnetic materials are separated from the magnetic. As far as rubber is concerned, we are interested only in the first classification. The only magnetic material in the ground rubber mixture is iron, the rubber itself, fillers, coloring matter, sulphur, shreads of cotton, the organic accelerators and other fabrics are all non-magnetic. What interests us is merely the removal of the iron.

Electromagnets and Permanent Magnets

There are two sorts of magnets, or rather two sorts of iron which exhibit different magnetic properties. Soft iron is magnetized and demagnetized by turning on and off the current flowing through coils of wire surrounding the iron poles. Steel once magnetized retains its magnetization; in other words it is a permanent magnet. The permanent magnet is of no importance as far as our present purpose is concerned. It gradually loses its magnetic powers and it would not perform its functions properly anyway. The electromagnet always possesses the same magnetic power, provided the current flowing through it does not vary in strength. It is easily controlled and its strength can be increased by increasing the strength of the current up to the limit that the conductors will carry without burning out.

The magnets themselves are made from cast iron in the form of horseshoes or rings. The magnetic field is formed within the air gap separating the two ends of the horseshoe. Through this air gap the magnetic lines of force flow from the north to the south pole of the magnet. Under similar conditions the two poles possess the same magnetic power. Consequently, if a piece of iron is brought to the exact center between the two poles it will not be drawn by either pole, or rather it will be pulled in two opposite directions by the same strength of magnetic force with the result that it will remain suspended between them. But when the the piece of iron comes nearer to one pole than to the other then it is attracted by the nearer pole and drawn to it. In all magnetic separation machines the poles and the flow of material past them must be arranged in such a manner that the material will be attracted more strongly by one pole than by the other. When this is done the magnetic substances are drawn to the pole and removed from the mixture.

Pointed Poles

Figure 1 shows a pair of magnetic poles of which the north pole is pointed. This is an important feature in the construction of magnetic separators for use in the rubber reworking process. The pointed pole posseses greater magnetic power than the blunt pole. The line of magnetic force is concentrated at this point and under like condition of current strength, width of air gap and turns of wire in the pole coils, the pointed pole will always afford more magnetic power than the blunt pole. This is particularly important when seperating material which possesses only weak magnetic properties.

Movable Magnet Roller Separators

In this type of machine the magnets move. They form the rollers between which the treated mixture passes. In Figure 2 the ground rubber is permitted to slide down an inclined plane on the right and to pass between the two rollers which rotate in opposite directions. One of these rollers is the north pole of the magnet and the other the south pole. The strongest magnetic field is found along the line which joins

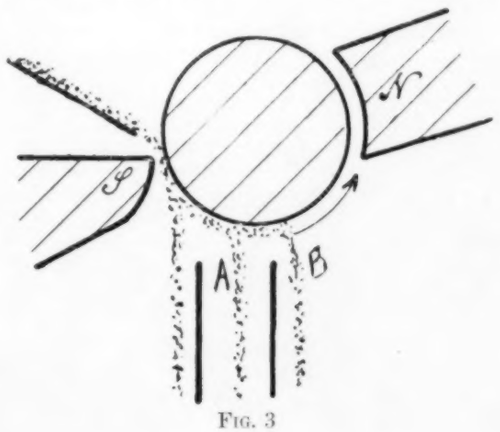


FIG. 3

the centers of the two rotating poles. At that point the material is really not attracted to either pole but as it moves away from this point and enters the less powerful parts of the magnetic field part is attracted to one pole and part to the other. In the figure it is easily seen what happens. The magnetic material is drawn to the right and the left and then falls free from the magnet while the non-magnetic material falls straight through in the center.

Stationary Magnet Roller Separator

This type of machine is shown in diagrammatic form in Figure 3. The roller is made magnetic in this case by induction from the electromagnet whose north and south poles are shown. A three-fold separation takes place. The non-magnetic material falls down perpendicularly. The magnetic substances, however, are attracted by the roller which is made of iron and zinc discs and which gets it magnetization by induction. The materials which are not very magnetic drop off first at A, when the inductive magnetism has become weakened sufficiently, while the more magnetic substances stick to the roller and drop off at B. The maximum magnetic effect is along the line, joining the centers of the two poles which is just where the ground rubber mixture first enters the separators.

Roller Separator with Internal Magnet

Still another type of separator is shown in Figure 4. Here

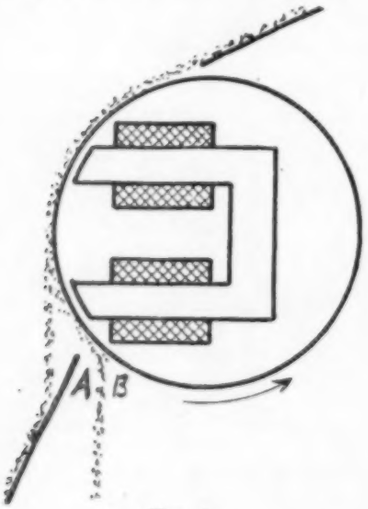


FIG. 4

the magnet is arranged inside of the roller. The latter is made of sheet zinc and the surface is covered with ribs of soft iron and copper or zinc. The magnet is stationary while the roller or drum turns. In this way the magnetized material is carried around on the drum by the induced magnetism until the point B is reached where the magnetic effect is weakened sufficiently to allow the material to drop off. The non-magnetic material has previously fallen off the drum at A.

Ringed Formed Magnetic Separators

This type of separator consists of a fixed pole piece, which is shaped in the form of a ring and which carries a number of perpendicular, movable magnetic poles, arranged in a circle. Around this there turns a drum which is provided with ring-shaped pointed counter-poles. The distance between these two pole arrangements can be fixed accurately. The drum is magnetized as it rotates around the fixed magnetic poles and thereby attracts the magnetic particles in the ground rubber mixture. The iron particles drop off the drum when the magnetization has become weakened sufficiently.

Magnetic Separator and Carrier

In Figure 5 there is seen a type of separator and carrier combined that is a machine which not only removes the iron particles from the ground rubber but also carries them to the

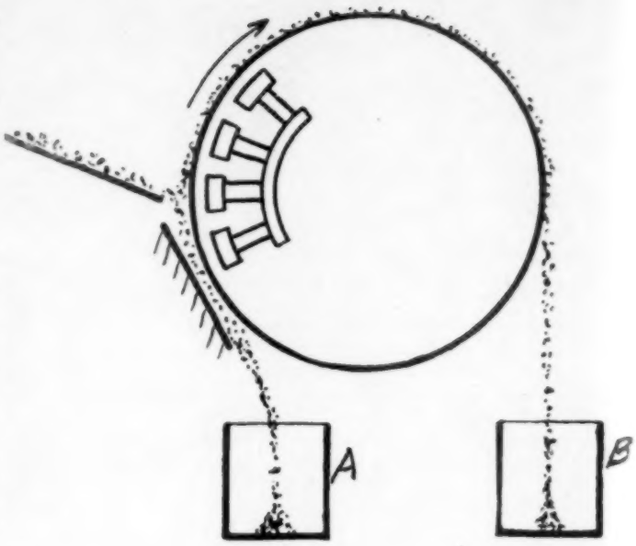


FIG. 5

proper point where they are dropped off. The machine consists of a drum which is non-magnetic and which has internally a series of fixed electromagnets. Externally the drum is provided with magnetic ribs and it rotates around the fixed group of magnets. The ground rubber is fed to the drum and the magnetic particles are attracted to it and cover it with a thin layer while the non-magnetic particles fall directly into A. The rotating drum carries the magnetic iron particles around until the point is reached where the drum is demagnetized and the iron falls off and is collected in B.

Magnetic Separator with Belts

A form of separator in which belts are used is shown in Figure 6. It will be noticed that there are three pointed poles in the electromagnet. The two outer poles 1 and 2 are south poles, while the center pole is the north pole. The ground rubber mixture is fed to a belt at A and is conveyed to the magnet field. The non-magnetic material falls down directly while the magnetic particles are attracted and carried by the belt B to a point where the magnetic ceases whence they fall off likewise.

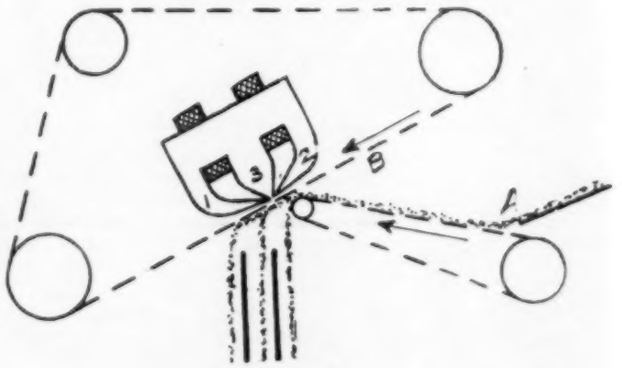


FIG. 6

According to the well-known rubber expert A. van Rossem, the physical testing of rubber is to be preferred in the determination of the quality of the crude product. Samples are made up containing 92.5 per cent rubber and 7.5 per cent of sulphur, and then vulcanized. An oil bath is used instead of the usual steam vulcanizer, due to the fact the oil will heat up the rubber more rapidly and result in a more rapid vulcanization and in a more constant maintenance of the temperature.

ABSTRACTS

Technical — General — Commercial

Properties of Crude Rubber

In the Journal of Industrial Chemistry of Japan, K. Kogakushi gives the results of a long series of experiments, made to determine the effect of different gases and other agencies on crude rubber, under different physical conditions. The best grade of smoked plantation crepe was used in the experiments. The samples were treated in the following manner.

The rubber was dissolved in commercial benzol. The solution was placed in brown glass flasks and evaporated in a vacuum at the ordinary temperature until films about two thousands of an inch in thickness were obtained. These films were then placed in a drying oven, which was heated electrically and kept at a constant temperature, while the various gases were passed over the film. The temperatures at which the tests were carried out varied from 70 to 140 degrees C. The duration of each test was four hours. A fan was used to maintain constant temperature within the oven.

After heating, each sample was dissolved again in commercial benzene. The insoluble matter was removed by filtration through a Gooch crucible. The filtrate was brought to the exact concentration of 0.5 per cent by the aid of benzene and the viscosity was measured at a temperature of 40 degrees C in an Ostwald viscosimeter and compared with that of the benzene itself. The benzene solution was then evaporated to dryness and the rubber analyzed by combustion. The insoluble residue was washed with benzene until the benzene wash liquors did not yield any solid matter on evaporation. Then the material remaining was dried in a vacuum and analyzed. The viscosity determinations afforded an indication of the physical change in the rubber (polymerization or depolymerization). Chemical changes in the rubber were told from the analyses.

A series of experiments were made to determine the effect of light on the rubber. The source of light used was an electric spark between iron and aluminum electrodes. The length of the spark between the iron and aluminum electrode was 10 millimeters and the difference in potential, causing the spark to jump across the air gap, was 12,000 volts. The rubber films were exposed to the light in test tubes of Vitresol glass for 18 and one half hours at a distance of 7 centimeters from the source of light and for 40 hours at a distance of 8 centimeters. One tube was filled with carbon dioxide and the other with air to determine the oxidizing effect of the light on the rubber. After the experiment was completed, the viscosity and composition of the rubber were determined in the manner explained above.

In order to study the effect of copper on the crude rubber, the following procedure was employed. A piece of smoked plantation sheet, 120 millimeters thick, was pressed between two copper plates for eleven months. Parts of the sheet, which became remarkably tacky, were removed and examined from time to time for viscosity and chemical composition.

The results of the experiments are summarized in the following.

1. Carbon dioxide, hydrogen, nitrogen, air or oxygen have only a slight influence on crude rubber up to a temperature of 70 degrees C, provided the rubber is protected against light. Carbon dioxide, hydrogen and nitrogen exert no chemical action on the rubber.

2. Ozone attacks rubber even at the ordinary temperature, oxidizing or depolymerizing the rubber.

3. The higher oxidation products are insoluble in benzene. Two oxidation products at least can be recognized. One of these is a solid of a yellowish brown color, brittle, resembling gum lac very closely. The second is a grayish amorphous powder. The composition of the highest oxidation product obtained in the experiment was $C_{10}H_{16.40}$.

4. As the temperature rises, the crude rubber depolymerizes gradually and the viscosity decreases. These phenomena are not very noticeable below 70 degrees C.

5. The oxidizing gases diminish likewise the viscosity of the crude rubber.

6. Carbon dioxide retards the depolymerization effect and protects the rubber from becoming tacky.

7. When the depolymerization action passes a certain point, the rubber begins to show signs of tackiness.

8. The tackiness of rubber is promoted and accelerated by the presence of copper, light and oxygen.

9. The condition of tackiness produced by copper is not an oxidized state of the rubber, but a depolymerized condition.

10. Light has a double effect in promoting polymerization and depolymerization in the rubber, when allowed to stream through transparent gases. Polymerized rubber is insoluble in benzene.

11. The action of light on rubber is not an oxidizing action, for exactly the same condition was observed in the case of carbon dioxide.

12. Tacky rubber, that is depolymerized rubber gives a vulcanized product which is inferior in quality. The strength of the rubber is reduced particularly.

Determination of Sulphur in Vulcanized Rubber

A new method of determining the proportion of sulphur in vulcanized rubber is given in the *Gummi Zeitung*, 34, pages 1020 and 1044. This method is as follows. One gram of the vulcanized rubber is heated in an Erlenmeyer flask of 200 to 300 cubic centimeters capacity with 40 cubic centimeters of nitric acid (one to four strength) and 6 grams of dry magnesium nitrate. The heating is continued until the liquid begins to foam, whereat the flame is removed. After the foaming has ceased, the flask is heated for one hour with the liquid therein boiling slightly. Then one to two drops of bromine are added and the heating continued for another half hour. The liquor is then poured into a porcelain evaporating dish and evaporated to dryness. Then 10 cubic centimeters of strong hydrochloric acid and the mixture is evaporated on a water bath until the mass, which still remains fluid on the both, solidifies on cooling. The residue is taken up with warm water, filtered and the sulphuric acid is determined in the filtrate. It is claimed that the results that are obtained with this method agree very well with the method developed by Waters and Tuttle (see Scientific Paper No. 174-1912 of the Bureau Standards). The new method is not so difficult to carry out and is more rapid.

Rubbery Compositions

A weakly alkaline naphthene soap solution is treated with aluminum or chromium salts until a precipitate of the salts of hexa-naphthene carboxylic acid is formed. These salts are then heated to temperatures in excess of 160 degres C. When the temperature for example, is raised to 170 degrees C, there is obtained a rubber-like mass, which gives rubbery, highly viscous and strongly jelling solutions with the solvents, commonly used to dissolve rubber. When the naphthanic acid salts are heated to higher temperatures, for example, to 200 degrees C, the viscosity of the solution is diminished. At a temperature of 360 degrees C, there is obtained a horny mass which dissolves in turpentine, benzene, solvent naphtha, pine oil and the like to a thinly viscuous solution. For further details the reader is referred to German Patent No. 327,913.

A Golf Ball that Will Float

British Patent No. 171,396 describes a golf ball which is provided with air passages extending from the outer surface to an inner core which is inflated. This enables the ball to float on the surface of water.

Review of World's Crude Rubber Market

The summary of the present position of the crude rubber market of the world as prepared by W. H. Rickinson & Son of London and published in "The World's Rubber Position" is reproduced herewith. The probable requirement for the United States is placed at 240,000 tons for 1922. Crude Rubber men in this market believe this is a very liberal estimate making an average of 20,000 tons per month. They believe 16,000 tons per month, or 192,000 tons for the year, will be a closer estimate judging from the course of the market so far this year

THE unhappy state of the rubber market at the present time is in a very great measure due to the want of union among the producers and their failing to put into force *generally* the 25 per cent restriction recommended by the Rubber Growers' Association. If this advice had been accepted and *loyally* acted upon by all the growers, the market would now have been in a much more satisfactory condition.

The partial restriction which was applied in the year 1921, had the effect of reducing the available quantity of Plantation Rubber by about 31,000 tons; had the full restriction recommended been carried out it would have been further reduced by about another 45,000 tons. This is about equal to the amount retained in the United Kingdom, over and above the requirements of the British Manufacturers.

Nothing definite having been settled as to restriction, the following may assist in arriving at an idea as to the probabilities for the year 1922, and confirm the wisdom of the advice offered by the Rubber Growers' Association:

SOURCES OF SUPPLY.	Tons.	PROBABLE REQUIREMENTS	Tons.
Brazil and Wild Rubber	20,000	U.S.A.	240,000
Surplus in Gt. Britain	52,000	U.K.	30,000
		France	18,000
	72,000	Germany	25,000
		Italy	6,000
Required from plantation ..	283,000	Canada	10,000
		Netherlands	3,000
		Japan	15,000
		Belgium	3,000
		Rest	5,000
Total	355,000	Total	355,000

From the foregoing it will be seen that the amount of rubber required from the plantations for the current year will be about the same as the shipments in the year 1921, when the 25 per cent restriction was applied by most of the *Sterling* Companies and this restriction should certainly continue for *at the very least*, the first half of the present year.

Three months total cessation of tapping, however, would be more effective than two years of such partial restriction as was applied in 1921. As long as the accumulations and current supplies exceed the demand, the depression in the price will continue.

While the proposal for the renewal of the Rubber Growers' Association's restriction scheme for the first half of 1922, was being considered by the growers, a considerable quantity of rubber was diverted from the United Kingdom, consequently raising the price to about 11½d. per pound, and undoubtedly it was owing to this that the scheme failed to obtain the necessary support. The scheme was abandoned and the price of rubber has again receded to the neighborhood of 8d. per pound.

Should the probable requirements vary it would affect the quantity required from the plantations accordingly.

The barometer over leaf shows in the simplest way the main factors which affect the condition of the market and control the price of the commodity; sufficient information is supplied monthly to keep these tables up-to-date.

THE BAROMETER.

(Table 1.)

1919	"A" Plantation Rubber Shipments. Being about 90 per cent of the World's Production (in tons).	"B" U.S.A. retained. The largest consumer, taking about 60 per cent of the World's Production (in tons).	"C" Gt. Britain retained. This amount directly affects the price (see footnote) (in tons).	"D" Plantation Rubber (per lb.) Highest s. d.	Lowest s.d.
January ..	30,150	10,200	4,232	2/2¾	2/0
February .	35,209	14,823	2,853	2/1¾	2/0¼
March	42,187	28,677	3,625	2/1¼	2/0
April	25,231	27,381	12,030	2/0¼	1/10½
May	30,406	24,600	6,301	1/11½	1/10½
June	18,658	16,185	6,066	1/10½	1/8
July	22,354	23,304	4,296	1/11¾	1/9¼
August ..	23,480	9,914	225	2/1½	1/11
September .	26,878	13,522	1,433	2/4¾	2/1½
October ..	27,125	19,235	384	2/4¾	2/2¼
November .	28,000	24,804	—401	2/6	2/4½
December .	30,547	24,332	1,476	2/11	2/5½
Totals	340,225	236,977	42,520*		
1920					
January ..	30,226	25,159	—508	2/10¼	2/7½
February .	34,186	31,790	4,281	2/9½	2/7
March	22,715	36,573	363	2/7½	2/2¼
April	26,278	28,029	2,518	2/3¼	2/1½
May	26,424	19,441	203	2/2¼	1/10¾
June	26,260	19,244	4,493	2/1	1/10¾
July	26,409	20,168	6,124	2/0	1/9¼
August ..	20,785	19,359	7,381	2/0	1/9¼
September .	23,961	12,137	7,179	1/9	1/6
October ..	24,547	8,333	9,588	1/6½	1/4
November†	21,025	14,462	9,073	1/3	1/0¾
December .	22,000	10,096	6,277	1/1¾	0/10
Totals	304,816	248,791	56,972*		
1921					
January ..	20,707	11,491	9,396	1/3½	0/11¼
February .	19,121	9,468	6,316	1/2¼	1/0¾
March	19,711	12,449	6,955	1/0¾	0/11½
April	21,028	10,887	6,950	0/11½	0/10¼
May	21,877	10,251	6,075	0/10¼	0/8¼
June	21,992	15,129	4,064	0/9	0/8
July	20,450	11,964	3,724	0/10	0/8¾
August ..	25,703	14,332	186	0/9¼	0/8
September .	27,343	14,819	—817	0/9½	0/8¼
October ..	22,983	20,635	—719	0/10¼	0/8¼
November .	27,500	24,000‡	—820	0/11¼	0/9¾
December .	26,500	24,572‡	806	0/11¾	0/10¾
Totals	272,915	180,000	42,116*		

* The normal retention in Great Britain would not have exceeded 30,000 tons per annum, or 90,000 tons for the past 3 years, whereas 141,608 tons were retained; a surplus of at least 51,608 tons. This accumulation has brought down the price to under 1/0 per lb., and not until the condition is reversed will the price improve (see Columns "C" and "D" for the months August to December, 1921).

† Restriction of tapping commenced this month. ‡ Estimated.

(Table 2).

BALANCE SHEET for years ended 31st December, 1919, 1920 and 1921.

SHIPMENTS.	1919	1920	1921	Per cent 1921
Plantation	340,225	304,816	272,915	92.3
Brazilian	34,285	30,790	19,837	6.7
Rest (including Central American, African and Mexican)	7,350	8,125	2,890	1.0
Totals	381,860	343,731	295,642	100.0
			343,731	
			381,860	
Afloat 31st December, 1918		....	42,340	
Total (3 years)		....	1,063,573	

(Table 2) continued.

DISTRIBUTION.	1919	1920	1921	Per cent 1921
U.S.A.	236,977	248,791	180,000	59.2
United Kingdom	42,520	56,972	42,116	13.8
France	22,300	16,606	14,000	4.6
Germany	4,000	13,400	22,000	7.3
Italy	10,200	6,300	5,000	1.7
Canada	9,500	11,300	8,500	2.8
Netherlands	3,200	5,700	2,500	0.9
Japan	12,000	5,500	21,000	6.9
Belgium	5,000	3,500	3,000	0.9
Rest	4,700	5,000	5,700	1.9
Totals	348,397	374,069	303,816	100.0
			374,069	
			348,397	
Afloat 31st December, 1921	....	....	37,291	
Total (3 years)	....	....	1,063,573	

(Table 3).

PLANTATION PRODUCTION (in tons)

	Acres in bearing	Actual Tons	Lb. per acre in bearing	Annual increase of area in bearing
1910	116,500	8,200	=157	—
1911	294,200	14,419	=109	139.6 per cent
1912	506,550	28,518	=126	72.1 per cent
1913	687,350	47,618	=155	35.6 per cent
1914	861,150	71,380	=185	25.3 per cent
1915	1,122,550	107,867	=215	30.3 per cent
1916	1,505,350	152,650	=227	34.1 per cent
1917	1,817,350	213,070	=262	20.7 per cent
1918	2,021,750	255,950	=283	11.2 per cent
1919	2,181,050	285,225	=293	7.8 per cent
1920	2,293,750	304,816	=297	5.2 per cent
1921	2,458,950	272,915	=248	7.2 per cent

FOR ESTIMATING

(Table 4).

This table is intended to assist in arriving at a forecast of the plantation production for the years 1922—26 inclusive, according to the lb. per planted acre in bearing assumed to be yielded and indicated in italic figures at the head of each column.

Lb. per acre	*200*	*250*	*300*	*350*	*400*	*Annual increase Acres in bearing*	*of area in bearing*
1922	233,156	291,450	349,734	408,023	466,312	2,611,350	6.2 per cent
1923	246,428	308,030	369,636	431,242	492,348	2,759,950	5.6 per cent
1924	259,786	324,860	389,832	454,804	519,776	2,910,750	5.4 per cent
1925	269,710	337,137	404,565	471,992	539,420	3,020,750	3.7 per cent
1926	274,084	342,603	411,126	479,680	548,168	3,069,750	1.6 per cent

(Table 5).

FLUCTUATIONS, ETC., IN THE PRICE DURING 1911-21.

PLANTATION (Best Crepe)

(Table 5).

	1911	1912	1913	1914	1915	1916
Highest	7/3	5/9	4/6½	3/0	4/1½	4/3½
Lowest	4/6	4/1	2/0	1/11½	1/11¾	2/1¾
Average	5/5½	4/9	3/0¼	2/3½	2/6	2/10¼

	1917	1918	1919	1920	1921
Highest	3/4½	2/6¾	2/11	2/10¼	1/3½
Lowest	2/2¾	2/1	1/7	0/10	0/8
Average	2/9¾	2/3½	2/1¼	1/11	0/10½

PARA (Fine Hard) Rubber

	1911	1912	1913	1914	1915	1916
Highest	7/2	5/2½	4/7	3/2¾	3/8¾	4/1
Lowest	3/10	4/3	3/0½	2/6	2/4½	2/7¼
Average	5/0	4/10	3/8	2/10½	2/7	3/1½

	1917	1918	1919	1920	1921
Highest	3/5	3/8	2/8	2/8	1/2½
Lowest	2/5½	2/7	2/4¼	1/0¼	0/10
Average	3/1¾	2/11½	2/5½	1/11½	1/0

(Table 6).

GENERAL INFORMATION

World's Production.

Year.	Plantation.	Brazil.	Rest.	Total.	Percentage of Inc. or Dec.
1910	8,200	40,800	21,500	70,500	+1.2
1911	14,419	37,730	23,000	75,149	+6.5
1912	28,518	42,410	28,000	98,928	+31.6
1913	47,618	39,370	21,452	108,440	+9.6
1914	71,380	37,000	12,000	120,380	+11.0
1915	107,867	37,220	13,615	158,702	+31.8
1916	152,650	36,500	12,448	201,598	+27.0
1917	213,070	39,370	13,258	265,698	+31.1
1918	255,950	30,700	9,929	296,579	+11.7
1919	285,225	34,285	7,350	326,860	+10.2
1920	304,816	30,790	8,125	343,731	+5.1
1921	272,915	19,837	2,890	295,642	—13.9

Year.	Plantation Rubber. Acres planted up to	Annual Inc.	U.S. of America. Retained (in tons)	Percentage of Inc. or Dec.	Average Price (Best Crepe)
1910	1,122,550	—	31,576	—	8/9
1911	1,505,350	34.1	29,235	—7.4	5/5½
1912	1,817,350	20.7	50,248	+71.8	4/9
1913	2,021,750	11.2	49,851	—0.8	3/0¼
1914	2,181,050	7.8	61,249	+22.8	2/3½
1915	2,293,750	5.2	96,792	+58.0	2/6
1916	2,458,950	7.2	116,475	+20.3	2/10¼
1917	2,611,350	6.2	177,088	+52.0	2/9¾
1918	2,759,950	5.6	142,772	—19.3	2/3½
1919	2,910,750	5.4	236,977	+60.4	2/1½
1920	3,020,750	3.7	248,791	+4.9	1/11
1921	3,069,750	1.6	180,000	—27.6	0/10½

The Rubber Position

By C. F. Bodde

"In the past lies the present: *In the present rests the future.*"

(First Installment)

In June last the Dutch East Indian Government took the initiative through the Director of Agriculture, in inviting the opinions of the various planters' associations with reference to voluntary or compulsory restriction of rubber production.

The replies which were received were not entirely unanimous regarding the measures to be applied, still they were fairly well agreed that restriction of crop was desirable.

Toward this result Dr. Hierneiss, who, invited by the Society for the Promotion of Agriculture and Industry at Djember, at their meeting of June 18, showed by figures the actual crisis for the first time in public, had undoubtedly a great influence.

These figures were repeated in newspapers and trade journals, and became common knowledge, forming the basis on which the further arguments of advocates as well as opponents were built.

Dr. Hierneiss estimated, with the help of American statistics, the world stock at the end of 1920 at 350,000 tons, and the undermentioned production and consumption figures (in tons):—

	Production.	*Consumption.*
1921	400,000	250,000
1922	425,000	270,000
1923	440,000	300,000
1924	450,000	325,000

He calculated that a restriction of crop of 50 per cent during 1922, 1923 and 1924 (for 1921 only 25 per cent) would in that time effect a reduction in the world's stocks from 350,000 tons to 162,000 tons (about normal). [*Note by Translator.*—The amount of 350,000 tons includes also an estimate of the "invisible" stocks. In other publications, as a rule, only the "visible" stocks are given.]

The question to be put to Dr. Hierneiss is, how does he himself view the more distant future?

Presuming that, up to the end of 1924, producers would agree to a crop restriction of 50 per cent, then it can reasonably be expected that they will thereafter wish to reap the benefits of their voluntary foregoing of profits, by again producing normally at paying prices.

On the basis of the figures quoted the productions for 1925-1926 would amount to about 925,000 tons, with a consumption in the same period of about 725,000 tons. Therefore an under-consumption of 200,000 tons, being more than the reduction in surplus through the four years of 50 per cent restriction; so that within two years after the cessation of crop restriction we should be worse off than before.

It will be difficult for many to reconcile this with the statement that "for future purposes not one rubber tree too many has been planted."

The first to take exception to the views of Dr. Hierneiss was Mr. van Gennep, who at the meeting of the Volksraad on July 4 expressed himself strongly against crop restriction in general and Government intervention in particular.

Th. Ligthart supported this opinion, criticising the figures given by Dr. Hierneiss, and was further of the opinion that the estimate of the latter for future production for 1923 (320 lb. per acre) was too low, and that it should be taken at 400 lb. per acre.

Taking the present world's planted acreage of 3,250,000

A translation of the article published in the Dutch East Indies *Rubbertijdschrift*, No. 18, for December 1, 1921.

acres, quoted by Dr. Hierneiss, as being correct, this makes a difference between the two estimates of about 116,000 tons per year!

The Rubber Growers' Association and the International Association of Rubber Cultivation in Ned, India, tried to reach an agreement, through consultations, for measures to be mutually adopted on a basis of a five years' crop restriction of 50 per cent.

In the meantime the British Government, through the Minister for the Colonies, on May 4 made known that Government intervention was not to be reckoned on, and that its opinion was that "conditions had to right themselves."

In the middle of August information was received that the majority of the members of the International Association of Rubber Cultivation in Ned. India had refused to have anything further to do with crop restriction.

From this it appears that temporarily the plans for artificial crop restriction are abandoned, ad that the struggle known as "the survival of the fittest" is beginning.

In reality there are no real data available of the actual situation which justifies one in considering as strange so definite a conclusion as that mentioned above.

To mention only the stocks at the end of 1920, Dr. Hierneiss takes 350,000 tons, while Messrs Wijnand and Keppler take 200,000 tons, and the committee appointed on the motion of Mr. Ruijs of the International give them as 295,000 tons.

According to Rickinson's figures the world's consumption during the last five years has been only 40,000 tons below the world's production.

When in regard to a figure which more than any other should be definitely ascertainable, the different sources show absolutely no connection between them, it is not surprising that with regard to the estimates of the production and consumption in the near future, opinion should differ greatly.

Even the planted acreage, that by one is given as 3,000,000 acres, is estimated by another at 3,250,000 a difference that amounts to nearly the entire planted acreage of Java, and that in course of time with a capacity of one-seventh of a ton per acre, represents a production of about 35,000 tons per annum.

As an illustration of the application of crop restriction, in the controversy between Messrs. Hierneiss and Ligthart the question has been asked, what attitude one might expect of a planter if he was entrusted with the management of the entire world's planted acreage?

To this, however, another question should be given preference, viz., "What standpoint would this hypothetical manager take regarding the present situation and that in the near future?"

To find an answer to this question is the object of this article.

I assume that the imaginary manager would, first of all, try to form an independent opinion as to the capacity of his trees, and where the separate complexes differ by at least 15 years in age it appears not impossible to estimate at least approximately the behavior of the younger trees from the known behavior of the older ones.

He would certainly not let himself be misled into adopting a hard and fast fixed average figure for such a heterogeneous collection.

He would, I think, take the following course:—

My plantation consists of the following (taken from Rickinson's statistics):—

Planted in	*Total for the Year.*	*Grand Total.*
1905	160,000	
1906	170,000	330,000
1907	176,550	506,550
1908	180,800	687,350
1909	173,800	861,150
1910	261,400	1,122,550
1911	382,800	1,505,350
1912	312,000	1,817,350
1913	204,400	2,021,750
1914	159,300	2,181,050
1915	112,700	2,293,750
1916	165,200	2,458,950
1917	152,400	2,611,350
1918	148,600	2,759,950
1919	150,800	2,910,750
1920	110,000	3,020,750

To ascertain the annual productivity of each year separately, it is necessary to know what the behavior of my plantation in total has been to date, and I would take as basis that an estate may come into production at five, six or seven years of age.

For this he divides the number of acres making up the world's planted acreage at a given moment by the known total production of five, six and seven years later, and gets hereby three series of average productions per acre, for simplicity's sake called "acre figures," at five, six, and seven years of age, and these will give him an idea of the rate of increased productivity with age.

From this he develops the following table:—

World's Planted Area. Acres.	*Production in tons.*	*Acre Figures in lb.* 5 yrs.	6 yrs.	7 yrs.
1908 687,350				
1909 861,150				
1910 1,112,550	1915 107,867	213	279	349
1911 1,505,350	1916 152,650	227	305	397
1912 1,817,350	1917 213,070	253	310	425
1913 2,021,750	1918 254,950	282	314	379
1914 2,181,050	1919 286,225	294	317	353
1915 2,293,750	1920 304,816	298	313	338

From this, beginning with the five-year age, the following observations are noted:—

From 1914 to 1915 the increase (27 lb.) was less than in the former year (31 lb.), which was probably caused by the large acreage planted in 1910 coming into tapping in that year, and with its low production figure reducing the average.

As the planting in 1911 was by far the greatest, it is no cause for surprise that this factor to a still greater extent affects the average acre figure of five years later, so that the increase from 1915 to 1916 is again less (14 lb.).

The sharp increase from 1916 to 1917 is less easily explained, as then the plantings of 1912, which were only slightly smaller than those of the previous year, first came into tapping, and this cannot have failed to depress the average, while the productivity of the previous year should also have still remained below the average production figure. In 1918 came into production the area planted in 1913, which was more than 100,000 acres less than that of the two previous years, and it could therefore be expected that the favorable influence in this respect on the average acre figure would have been less.

Contrary to this the increase was smaller than in 1917, namely only 19 lb.

As the plantings of 1910 (261,400 acres) will in the meantime have presumably produced more than the average, and those of 1911 (382,800 acres) cannot have been far behind, there must exist another reason why the increase from 1917 to 1918 remains so far below that of 1916 to 1917, and that can only be looked for in the behavior of the oldest plantings.

The conclusion therefore is that these (dating from 1905) have gone backward in productivity, for which reason the increase of the average remains below the expectation.

The behavior in 1919 supports this assumption, as now about two-thirds of the producing area (69 per cent) are eight years older, a period when figures of 300 to 400 lb. can be expected, while the average only shows 294 lb.

In 1920 nearly four-fifths of the plantings (79 per cent) were in this class, and still the acre figure remains below 300 lb.

Accepting the suggested production decline as correct, the acre-figure of the five year age teaches besides that this backward movement in the world's plantings starts in the thirteenth year, i.e., it made itself first felt in 1918 on the oldest planting (those of 1905).

In a still greater degree is this demonstrated if we further consider the acre-figures for the seven year age.

Here is there not only a steadily declining measure of increase, but a strongly ascending line (349-397-425) from 1915 to 1917, followed by an almost equally sharp declining line (379-353-338) from 1918 to 1920.

Here also the turning point is in 1917.

This phenomenon, which, so far as is known to me, has never been taken into account by experts in their future estimates, finds further confirmation in the figures of some old estates in Java.

There are even examples known where this backward movement commences in the twelfth, and in some estates even in the eleventh year.

(To be concluded)

NEWS OF THE INDUSTRY

News of the Rubber Association

Mechanical Goods Manufacturers Formulate Definite Plan for Handling Various Requests—Seiberling and Cooper Companies Elected to Tire Division Membership—Schedule of Meetings

The Executive Committee of the Mechanical Goods Division, at a meeting on Feb. 23, discussed the desirability of a definite plan for handling the many requests for funds and solicitation of all sorts which manufacturers of mechanical goods encounter at their home and branch offices. The scope of the solicitation seems to be unlimited, and it includes appeals for support of many kinds of undertakings—philanthropic, commercial, sales promotional, civic, charitable, anti-labor, social, etc., etc.

The Tire Manufacturers Division of the Rubber Association is dealing with the problem presented by this solicitation, through a recommendation that all appeals be referred to the Rubber Association office for consideration from the standpoint of the whole industry rather than the individual company. After consideration of the merits of each case, a response is made by the General Manager to the source of the solicitation, expressing the attitude of the members of the Tire Division toward the appeal. There is a steadily growing tendency to look without favor upon requests for financial support because their number is increasing rapidly and it is becoming more and more difficult to determine which are worthy of support, as each has a strong appeal. It is the view of the Tire Division that it is economically unsound to indiscriminately participate in all of the work being attempted by existing or contemplated organizations, particularly as there is often a duplication of effort and sometimes misdirected effort.

The Executive Committee of the Mechanical Goods Division, believing the situation in the mechanical goods industry to be substantially the same, concluded to recommend the following to members of the Division:

RECOMMENDATION

Whereas, It has come to the attention of the Executive Committee, Mechanical Rubber Goods Manufacturers Division, that requests for contributions to funds (philanthropic, commercial, sales promotional, civic, charitable, etc.) purchase of propaganda for distribution, acquiring of membership in the organization, etc., are being made of individual manufacturers by numerous organizations, and

Whereas, The Executive Committee—Mechanical Rubber Goods Manufacturers Division, has carefully considered the desirability, from the economic and other points of view, of uniform action on such matters by manufacturers through the Rubber Association based upon consideration of the merits of each case, instead of individual action by manufacturers, it is, therefore

RECOMMENDED, That, with the exception of that solicitation which is purely local to the municipality in which the manufacturing plants of members are located, manufacturers decline to participate in supporting activities of the nature referred to in the foregoing, and that they respond to all such solicitation by referring requests to the Rubber Association for consideration and disposition by the Executive Committee or by the Division as a whole.

Seiberling and Cooper Companies Elected to Tire Division Membership

The Executive Committee of the Tire Manufacturers Division, at its February regular meeting, elected to membership in that Division two new Association members, as follows:

Seiberling Rubber Co.
I. R. Bailey—Division Representative
Akron, Ohio.
The Cooper Corporation
J. F. Schaefer—Division Representative,
Findlay, Ohio.

Schedule of Meetings

Specification Committee, Mechanical Goods Division at Rubber Association office, Wednesday, March 8, at 10:30 a. m.

Tire Manufacturers Division at Hollenden Hotel, Cleveland, Ohio, Tuesday, March 21, at 12:30 beginning with luncheon.

Executive Committee, Tire Manufacturers Division, Hollenden Hotel, Cleveland, Ohio., Tuesday, March 21, at 10 a. m.

Board of Directors, at Lotos Club, New York City, Thursday, March 23, at 1:00 p. m.

Extend Final Date for Filing Claims against Railroad Administration

By an act of Congress, amending the Transportation Act of 1920, there is a further extension of the final date for filing claims for overcharge in freight on traffic moving during the period of Federal control, to Sept. 1, 1922. Association members having such claims, who have not yet filed them, should immediately do so, as the carriers are authorized to adjust them.

Prior to this latest amendment of the Transportation Act, claimants were disbarred after Feb. 28, 1922, from suing the Railroad Administration for the payment of reparation ordered by the Commission. The time limit is now to be fixed automatically in each instance, as *one year from the date of the Commission's reparation order.*

Elect Standing Committees

At the February meeting of the board of directors the following members were appointed on the various standing committees:

NOMINATING COMMITTTEE—Bertram G. Work, The B. F. Goodrich Co., 1780 Broadway, New York, N. Y.; Harvey S. Firestone, Firestone Tire & Rubber Co., Akron, Ohio; George B. Hodgman, Hodgman Rubber Co., Tuckahoe, N. Y.; Frederic C. Hood, Hood Rubber Co., Watertown, Mass.; Homer E. Sawyer, United States Rubber Co., 1790 Broadway, New York, N. Y.

LEGISLATIVE COMMITTEE—Charles Neave, chairman, and general counsel of The Rubber Association of America, Inc., 5 Nassau Street, New York, N. Y.; F. C. Van Cleef, The B. F. Goodrich Co., Akron, Ohio; Ernest Hopkinson, United States Rubber Co., 1790 Broadway, New York, N. Y.

AUDITING COMMITTEE—E. M. Bogardus, chairman, The Fisk Rubber Co., 250 W. 57th Street, New York, N. Y.; W. O. Cutter, United States Rubber Co., 1790 Broadway, New York, N. Y.

BANQUET COMMITTEE—J. N. Gunn, chairman, United States Tire Co., 1790 Broadway, New York, N. Y.; Horace DeLisser, Ajax Rubber Co., Inc., 220 W. 57th Street, New York, N. Y.; W. O. Rutherford, The B. F. Goodrich Co., Akron, Ohio.

OUTING COMMITTEE—J. V. Mowe, chairman, Kelly-Springfield Tire Co., 1710 Broadway, New York, N. Y.; F. R. Henderson, F. R. Henderson & Co., 111 Broadway, New York, N. Y.; F. C. Milhoff, The Miller Rubber Co., Akron, Ohio.

ARBITRATION COMMITTEE—(Terms Expire 1925)—S. G. Carkhuff, Firestone Tire & Rubber Co., Akron, Ohio; W. E. Bruyn, L. Littlejohn & Co., 133 Front Street, New York, N. Y.

(Terms Expire 1924)—A. A. Garthwaite, Lee Tire & Rubber Co., 245 W. 55th Street, New York, N. Y.; G. A. Ludington. The Fisk Rubber Co., 250 W. 57th Street, New York, N. Y.

(Terms Expire 1923)—A. B. Jones, Kelly-Springfield Tire Co., 200 W. 57th Street, New York, N. Y.; J. T. Johnstone, J. T. Johnstone & Co., Inc., 22 William Street, New York, N. Y.; W. T. Baird, Baird Rubber & Trading Co., Inc., 9 Murray Street, New York, N. Y.

GENERAL TAX COMMITTEE—F. C. Van Cleef, chairman, The B. F. Goodrich Co., Akron, Ohio; Kennedy M. Thompson, United States Rubber Co., 1790 Broadway, New York, N. Y.; E. S. Kochersperger, Hood Rubber Co., Watertown, Mass.

INDUSTRIAL RELATIONS COMMITTEE—M. A. Flynn, chairman, The B. F. Goodrich Co., Akron, Ohio; C. H. Oakley, Essex Rubber Co., Inc., Trenton, N. J.; W. R. Murphy, Firestone Tire & Rubber Co., Akron, Ohio; H. T. Martin, The Fisk Rubber Co., Chicopee Falls, Mass.; H. O. Smith, Racine Auto Tire Co., Racine, Wis.; C. S. Ching, United States Rubber So., 1790 Broadway, New York, N. Y.

Tire Manufacturers' Division to Meet

The executive committee of the Tire Manufacturers' Division announces that, in conjunction with their plan of holding regular quarterly meetings, a meeting will be held at the Hollenden Hotel, Cleveland, Ohio, on March 23.

The store at 9 West 61st St., New York, has been leased by the Hewitt Rubber Co., Buffalo, N. Y.

Death of John J. Voorhees

In the death of John J. Voorhees, president of the Voorhees Rubber Manufacturing Co., of Jersey City, N. J., the rubber industry loses one of its best known and most respected members. He had been actively engaged in the business for upward of half a century, and for the past twenty-five years as president of the company which he founded and which bears his name.

For the past nine months he had been in gradually failing health, suffering from stomach trouble, but attended to business until the Friday before his death which occurred on Sunday, Feb. 26, at his home 25 Gifford Avenue, Jersey City.

He was a descendant of the old Dutch Van Voorhees family which settled Flatlands, Long Island, (now a part of Brooklyn) in 1660, and was born in 1848 in the old family homestead in that village. In 1870 he removed to Jersey City, and became connected with the New Jersey Car Spring & Rubber Co., which was then one of the leading manufacturers of mechanical rubber goods in the country. In 1898 he left that concern, and organized the Voorhees Rubber Manufacturing Co., at 18 Bostwick Avenue, Jersey City, of which he was the active head until his death.

JOHN J. VOORHEES, DECEASED

He was one of the organizers and president of the former Mechanical Rubber Goods Manufacturers Association, which in 1915 became the Mechanical Rubber Goods Manufacturers Division of the Rubber Association of America. He was chairman of this Division from 1918 to 1920, and under his guidance some of the most valuable work of the Division in the way of standardization of products was initiated.

He took an active interest in New Jersey politics and at the time of his death was a member of the Inter-State Palisade Park Commission. He had served six years on the Jersey City Board of Education, and was the donor of the Voorhees prize to the pupil standing highest in each graduating class in School No. 11 in that city. He served several years on the Jersey City Finance Commission, and in 1894 was elected president of the Jersey City Board of Trade which later became the Chamber of Commerce.

Both in his business and civic activities Mr. Voorhees was regarded as a man of the highest intelligence and probity, whose judgment was valued by all with whom he came in contact. He will be greatly missed by all members of the trade, especially by those in his own branch, the mechanical goods manufacturers, who best knew his friendly cheerful personality and pleasant humor.

He was a member of the Holland Society of New York, also of the Jersey City Club and a vestryman of St. Paul's Episcopal church where his funeral was held on Feb. 28. The interment was in Bay View Cemetery, Jersey City.

Besides his widow, he is survived by three sons, John J., Jr., Frank D. and Alex H. and four grandchildren. John J. is secretary of the Voorhees Rubber Manufacturing Co. and Frank D. treasurer and business manager.

Firestone Sends Saddle Horse to President Harding

Harvey S. Firestone, president of the Firestone Tire & Rubber Co., Akron, has sent to President Harding a Kentucky thoroughbred saddle horse named Harbel, the first saddle horse that the President has ridden for nearly 20 years. It will be recalled that Mr. Firestone was a member of the party including, Thomas Edison, Henry Ford and President Harding who camped near Big Pond, Md., last summer at which time the President first rode Harbel. Since that time he has ridden other horses attached to the White House stables but none has given him as much satisfaction as the three-year old sorrel gelding that took his fancy last summer.

W. A. Johnson May Consolidate Small Rubber Companies

W. A. Johnson, president of the Rubber Products Co., Barberton, Ohio, has revived a plan for the consolidation of a number of the smaller rubber companies into one large corporation. Mr. Johnson announced at a recent meeting of business men at Akron that the plan was under consideration but did not make any definite statements.

This plan has been under discussion at various times during the last two years. The purpose of the amalgamation would be to decrease overhead expense and make it possible to meet the keen competition expected in the industry for the next few years.

Bloomingdale to Make Heels

The Bloomingdale Rubber Co., Butler, N. J., has begun extensive alterations to the main building of its plant in preparation for the manufacture of rubber heels. At present the company manufacturers reclaimed rubber only. By the time alterations have been completed it is expected that fifty additional factory hands will be required. Production of from 40,000 to 50,000 heels a day is planned. The reclaiming end of the business is to be transferred to Chester, Pa.

Clark W. Harrison is president of the company with offices at 501 Fifth Avenue, New York.

McCampbell Elected Vice Pres. of Hunter Dry Kiln Co.

Paul R. McCampbell has been elected vice president of the Hunter Dry Kiln Co. of Indianapolis, manufacturers of the Hunter system of drying and processing rubber, and has become active in the management. He was formerly connected with the development department of the United States Rubber Co. O. M. Ragsdale who has been secretary-treasurer of the above company has been made president, to succeed the late Harry Hunter whose death occurred last fall. E. C. George succeeds Mr. Ragsdale as secretary-treasurer.

PAUL R. MCCAMPBELL
Vice-president, Hunter Dry Kiln Company, Indianapolis, Ind.

Mr. McCampbell sailed for Europe on February 15 where he has gone on business for the company. While there he will supervise installations of the Hunter System which are being made in England and on the Continent.

William M. Vanderhof, 73, who died at his home, Springfield Lake near Akron, Ohio, Feb. 18 after serving for forty years in various capacities in the Goodrich and the Goodyear factories, held the honor of having built more tires than any other man in the country.

Bellevue Rubber Co. Elects

At a meeting of the new Bellevue Rubber Company, Fostoria, Ohio, held on Feb. 14 the following officers were elected: Carl Smith, president; A. C. Dumont, vice president; H. C. Boyd, secretary and treasurer; H. B. Skinner, general manager. The only other member of the board of directors is Peter Schneider. Mr. Skinner stated recently that several large orders were at hand, and that the outlook for the new company is very encouraging. Production will begin as soon as raw materials can be delivered.

W. J. Rennick New Officer of McKone Tire & Rubber Co.

W. J. Rennick has been appointed secretary and treasurer of the McKone Tire & Rubber Co., Millersburg, Ohio. Mr. Rennick until recently was assistant to the general sales manager of the Miller Rubber Company, Akron, Ohio, and was for many years associated with the company in other capacities.

The general offices of the McKone company have been moved from Chicago to the plant at Millersburg. A sales office is still maintained in the McCormick Building, Chicago.

Large Company Being Formed to Make Belts and Tires

Formation of a $5,000,000 rubber corporation for the manufacture of a new conveyor belt patented by L. T. Petersen, former vice president of the Republic Rubber Corp., Akron, Ohio, is now under way. The company, which will operate two or more plants, will also manufacture a general line of mechanical goods and tires.

At least one plant will be put into operation as soon as the deal is consumated, according to an official announcement made on Feb. 12.

Mr. Petersen, who controls the conveyor belt patent, and has several other patents pending will be connected with the corporation in an executive capacity. He has twenty-eight years experience in the rubber business, having installed the laboratory of the B. F. Goodrich Co. at Akron. The reclaimed rubber process in use by the Republic Rubber Corp. was also installed and patented by Mr. Petersen.

The conveyor belt, which the new corporation will manufacture, is for use in carrying heavy materials such as grain, ore, limestone, coke and metal. It is claimed that the belt embodies many new features which will add greatly to its life when in use in mining districts, manufacturing plants, etc. The following claims are made for it: increased durability and flexibility while in practical operation; better bond or union and superior resistance to pounding action.

The belt is said to have a relatively thick and strong flexible body or carcass of multiple construction, an elastic cover enclosing this body, with the working face gradually increasing in thickness toward the longitudinal center. Reinforcing binding of cord run transversely across the structure just under the working surface.

Lake Jones New Southeastern District Manager for Ajax

The Ajax Rubber Co., Inc., announces the appointment of Lake Jones as district manager of the southeastern territory with headquarters in Atlanta.

In the rubber industry Mr. Jones is well and favorably known, having in the past been connected with a number of the large tire manufacturers. His experience, both in the sales end of the tire business, and in the personnel and general development ends, has been wide.

LAKE JONES

Mr. Jones has already assumed charge of the southeastern territory for the company and after a cursory survey of conditions, reports a favorable outlook for Ajax business in that territory.

New Subsidiary Will Distribute Dayton Tires

The Thorobred Rubber Tire Co., Dayton, Ohio, capitalized at $10,000, was incorporated on Jan. 31 in that city. John A. MacMillan, president of the Dayton Rubber Manufacturing Co., who was named as the principal incorporator, in a statement made that day, said that the company had been formed to distribute the tires made at the Dayton plant. The sole purpose of the new organization is to facilitate delivery, according to Mr. MacMillan.

Rubber Auction Sales in Paris

A group of French rubber importers, states "*Le Caoutchouc et la Gutta-Percha*," has decided to organize regular monthly rubber auction sales to take place in Paris. The bids are to be in French currency per kilogram.

New Tire Company Chartered

The Frazier Cushion Cord Tire Co., Wheeling, W. Va., was granted a charter on Feb.1 by Secretary of State Young. The new company, which will have a capital stock of $75,000, has been organized for the purpose of manufacturing a tire invented by Truman Frazier. The incorporators are Truman Frazier, Jason C. Stamp, John McAleer, M. J. Cullinan and Carl O. Schmidt.

Vulcan Recovery Co. Plant Destroyed by Fire

The plant of the Vulcan Recovery Co., Trenton, N. J., was burned Feb. 17. Although C. H. Oakley, treasurer of the company has not as yet made known the amount of the loss, he stated that it was fully covered by insurance. The plant will be rebuilt as soon as this claim has been adjusted.

The product of the Vulcan company is used by the Essex Rubber Co. for the manufacture of rubber soles, heels, etc. The Essex company has sufficient stock in its warehouse to keep its plant supplied until the Vulcan plant is rebuilt.

Major Ireland Detailed to Ideal Technical Committee

Maj. Mark L. Ireland, QMC, U. S. A., Director of the Tractive Resistance of Roads Research being conducted by the Army with the aid of the Massachusetts Institute of Technology at Cambridge, Mass., has been detailed by the Secretary of War to represent the United States Army on the Technical Committee appointed by the Lincoln Highway Association to determine the design for the Ideal Section which will be constructed this year for object lesson purposes. A large portion of the funds will be provided by the United States Rubber Co.

Victor Salesman Convene

At a conference of their salesmen from all parts of the country held with C. A. Swinehart, sales manager of the Victor company, on January 9, it was stated that production will be steadily increased.

Those at the conference were: F. C. Braden, manager, New York City; F. M. Root, manager, Chicago; B. V. Howard, manager, Kansas City; Ira A. Stowe, southern representative, Springfield; R. G. Guy, Dallas, Texas; H. G. Courtierer, Omaha, Neb.; W. D. Neff, Springfield; H. G. Wilson, Indianapolis, Ind.; Frank X Lothschuetz, Michigan representative, Springfield; J. P. Lothschuetz, Ohio representative, Springfield; H. S. Berlin, president, Springfield; C. A. Swinehart, sales-manager, Springfield; A. L. Fuch, advertising manager; A. L. Sackett, assistant sales-manager, and W. F. Nutt, credit manager, all of Springfield.

The Chamber of Commerce of Akron, Ohio, has been in correspondence with the United States Bureau of Mines regarding an anti-smoke campaign in that city.

To Build Addition to Western Rubber Products Plant

Erection of a $20,000 addition to the plant of the Western Rubber Products Company, Wichita, Kansas, is planned by the newly elected board of directors. It is also planned to install new machinery in order to double the capacity of the plant and permit the acceptance of new contracts which have been turned down in the past due to lack of facilities.

The decision was reached on February 4 after the annual meeting of stockholders. Directors elected at this meeting are: George Siedhoff, president of the Siedhoff Construction Company; O. P. Callahan, treasurer of the Marland Refining Company, Ponca City, Okla.; C. A. McCorkle, attorney; A. P. Haury, president of the Claflin Mill & Elevator Co., Claflin, Kansas; N. C. Schumacher, president, Citizens State Bank, Claflin, Kansas; J. H. Turner; and H. E. Little.

The following officers were elected: George Siedhoff, chairman of the board of directors; H. E. Little, president; F. N. Dreilling, secretary; and J. H. Turner, treasurer.

The company is engaged in the manufacture of "Vultex" products, which include motor fan belts for all makes of automobiles, trucks and tractors, halters, harness straps, shoe soles, gaskets, fly swatters, table and floor mats and a varied line of other rubber articles.

Republic Rubber To Re-Finance

The re-financing of the Republic Rubber Company, Youngstown, Ohio, to the extent of $1,000,000 through the issuance of receiver's certificates of indebtedness has been approved by Federal Judge D. C. Westenhaver of the United States court. The order was issued to Receiver C. H. Booth on January 3. Of this amount 70 per cent has already been subscribed, and it is expected that the balance will be subscribed within a short time. The re-financing plan will give the company additional working capacity and permit the expansion of operations and sales. The directors are now working on plans for the reorganization of the company, which will come about during the present year, it is said.

News of the Braender Company

At a meeting of stockholders of the Braender Rubber & Tire Co., Rutherford, N. J., held at the office of the company the following directors were elected: J. K. Watson, Rutherford National Bank; Rufus Trimble, Texas Company; Charles A. Horton, Hope Webbing Company; C. A. Schreffler, American Arts Co.; H. Cross, Insley Vreeland & Decker; R. P. Boyd, Boyd & Boyd; Thomas Gardner, Brighton Mills; J. T. Johnson, J. T. Johnson & Co.; Milton Damman; W. P. Braender and F. L. Braender.

Following the stockholders' meeting the board of directors elected the following officers: J. K. Watson, president and treasurer; F. L. Braender, first vice president, in charge of purchase and production; W. P. Braender, second vice president, in charge of sales; M. E. Morris, third vice president and general manager; Milton Damman, secretary, and Harry Braender, assistant secretary.

M. E. Morris was formerly assistant general manager of the Goodyear Tire & Rubber Co., of California. E. J. Sullivan, who has been appointed comptroller of the Braender organization, was formerly connected with the Dunlop Co., of Buffalo.

The Braender company, recently went under a reorganization—the new Braender Rubber & Tire Co., organized under the laws of Delaware, took over the old company, organized under the laws of New Jersey, on Nov. 1. The financial status of the Braender company is now strong; current assets are $299,000 against direct liabilities of $6,117. The unencumbered value of the plant is estimated at $585,000.

McGraw Stockholders Select New Board of Directors

At the annual meeting of stockholders of the McGraw Tire & Rubber Co., E. Palestine, Ohio, on January 9 the board of directors for the ensuing year was elected as follows: John Morgan, William H. Marlatt, C. H. Wheeler, L. M. Kyes, Maynard H. Murch, W. S. Quinlan, G. E. Randles, R. V. Mitchell, Mac S. Bethel, F. W. Treadway and Ben H. Davis.

In the absence of President Morgan, who was confined to his home by illness, Mr. Marlatt, secretary and treasurer, presided. After giving an explanatory review of the company's business during the last year, he expressed confidence in the outlook for 1922, stating that the company had secured the renewal of important sales contracts and that he felt certain that it would enjoy a large business during the coming year.

Dayton District Managers Meet

Sound prospects for good business during 1922 were evidenced at the conference of the district managers of the Dayton Rubber Manufacturing Co., Dayton, Ohio, held on January 5 and 6 at the plant of the company. The principal speakers were W. H. Hurley, general sales manager; J. A. MacMillan, president; R. F. Brown, treasurer; A. L. Friedlander, factory manager; and Messrs. Hunter and Hubler. Luncheons and dinners were served each day at the Dayton City Club. The conference closed with a dinner dance.

A. I. Butler Joins Brunswick

A. I. Butler, recently eastern sales manager of the Gordon Tire & Rubber Co., Canton, Ohio, and for the past fifteen years connected with the tire industry, has joined the Brunswick-Balke-Colender Co., Chicago, Ill., as sales manager of the tire division.

Lawrence & Co. Now Agents for International Cotton Mills

Lawrence & Co., Boston and New York, who took over the account of the International Cotton Mills, Jan. 1, 1922, on the retirement from business of the J. Spencer Turner Co., announce that J. E. Rousmaniere has become a partner of their firm, and that William T. White and R. L. Whitman, who are tire fabric salesmen and Charles S. Cook as hose and belting duck salesman, were long associated with the Turner company, will continue the sale of these fabrics from Lawrence Co.'s New York office, 24 Thomas St.

Lawrence & Co., under this arrangement, will sell the entire product of the following well-known mills: Bay State Cotton Corp., having mills at Lowell, Mass., Newburyport, Mass., Lisbon, Maine and LeRoy, N. Y.; Stark Mills, Manchester, N. H.; LaGrange Mills, LaGrange, Ga., and Hogansville Mills, Hogansville, Ga., and well as the product of the Imperial Cotton Co., Ltd., and the Cosmos Cotton Co., Ltd., in Canada.

The taking over of the International Cotton Mills will make Lawrence & Co. one of the leaders in duck, crash and tire fabrics, as they have been for many years in other textile lines.

Moss Tire & Rim Co. Formed

The Ohio State Securities Department has favorably passed on the sale and issuance of $50,000 capital stock of the newly organized Moss Tire & Rim Co., Ulrichsville, Ohio. The company is to manufacture and market the patented tire saver known as the "Centipede," which is a false tire made up of segments of other tires and bound together by a special rim named the "Centipede."

Contracts for machinery, raw material and equipment are already under negotiation, and the sales management and distributors have been appointed. A factory site has already been purchased. The board of directors is composed of the following: George S. McCaw; C. D. Lindsay; Alvin V. Lind; Robert Maxwell; F. W. Holland; Paul H. Stoutt; S. J. Moss, inventor of the device; G.C. Benfer; and V. L. Nofsker.

J. H. Ficken Joins the Howe Rubber Corporation

J. H. Ficken, who has been identified with the sale of Kelly-Springfield tires in New York for the last seven years, has been appointed a special sales representative of the Howe Rubber Corp., New Brunswick, N. J. Mr. Ficken will be under the supervision of F. A. Drake, eastern district manager, and will make his headquarters in New York. Prior to his connection with the Kelly-Springfield company, Mr. Ficken was with the United States Tire Co.

Explosive Hazards in Solvent Recovery

To the Editor, THE RUBBER AGE:—

I have noted in the January 10 issue of RUBBER AGE the comments of P. Wilcox Gumaer, President of the Benzine Condensation Company, on my article published in your Nov. 25 issue. He says the idea conveyed in one of my paragraphs is entirely wrong, and then he proceeds, in about 400 words, to prove that my statement is correct. I repeat my paragraph: "The great hazard in solvent recovery is due to the fact that the highly concentrated vapors are gathered in an enclosed vessel, and sufficient air leakage into the vessel will form an explosive mixture with disastrous results." The thought is this: to recover solvents economically it is necessary to gather highly concentrated vapors in an enclosed vessel. Highly concentrated vapors, I consider a mixture above the explosive range. If sufficient air is allowed to enter into the vessel, and thereby decrease the proportion of solvent gas in the mixture, so as to bring the mixture down to, and within, the explosive range, then an explosion is likely to follow.

This explosive range is passed through many times, by starting and stopping, as well as by numerous other operations, and might go on forever without disaster, *IF* some part of the machinery, foreign substance in stock, unintelligent operation of the apparatus, or carelessness of operator does not produce a trespassing spark at this very important period. These things have been the causes of numerous explosions, and they must be considered fully as important as correct design of equipment.

Furthermore. I wish to make this very broad statement—*so long as human beings are delegated to operate solvent recovery apparatus under present methods we shall have explosions.* (I hope infrequent). After learning the results of several such explosions in various factories due to wrong acts by workmen, and realizing it will take years to recover enough solvent to pay for the property loss alone, I hesitate when called upon to recommend the installation of solvent recovery apparatus.

I wish your readers would study my statement carefully as it warns of a true hazard, and from it the following three criticisms by Mr. Gumaer can not, in my opinion, be substantiated:

1. "A careful analysis of this statement will show that from a practical viewpoint it is exactly contrary to the true facts."

2. "Suppose for example that we have the greatest possible concentration of benzine gas (100 per cent) which the *author characterizes as so dangerous,*" etc.

3. "The actual explosive danger in solvent recovery is not as Mr. Mitchella says *in a high concentration of the explosive vapors,*" etc.

Please note carefully in his criticism of my article he makes this statement: "The air leakage in these instances is consequently very dangerous," and also in description of his apparatus he says "Many of these attempts (recovery of solvent) resulted in failure and some even disastrously, *due to the explosive properties of these gases when mixed with air.*" Also, "A mixture of air and gasoline vapor will not explode, except when mixed in the proper proportion. The percentage of gasoline vapor *must not be under 2.8 per cent or over 4.4 per cent.* As the solvent recovery apparatus contains very little air and in nearly pure benzine vapor no explosion can occur inside the apparatus." Apparently we would be led to believe that the mixture of gas in his apparatus must be within the explosive range, although his next sentence seems to rebut this. At least he claims *no explosion can occur.* I wish to draw attention to the latter claim as well as other statements as follows:

1. "No expert attention is required."

2. "When the machine begins operation it is full of air. The solvent vapor being heavier than air rapidly displaces the air within the apparatus ....."

3. "Although it is possible *through negligence* for the solvent vapors to catch fire *at the openings* when the fabric enters or leaves the apparatus this can readily be *smothered out.* The fire cannot spread inside the apparatus, as there is not sufficient oxygen present to support combustion."

4. "The spreading machine illustrated can be operated faster when equipped with the solvent recovery apparatus, because the *partial vacuum* created within the apparatus causes the solvent to evaporate more rapidly from the fabric."

5. (Referring to sheeter calender for asbestos packing) "The wet mixture is shovelled into the machine, between the large and small rollers. During the interval that it takes to use this up, the upper surface of the "dope" becomes partly dry. Where this dried material is rolled into the sheet, there is a tendency to form a bad spot. When the recovery system is in use, the wet "dope" does not begin to dry until it reaches the hot roller, ..." I have the following comments to make upon these statements:

1. Even expert attention could not prevent uncontrollable causes of sparks which sometimes will take place during the explosive range of the vapors.

2. Is it not true that the vapors thus pass through the explosive range? And the same when the machine is stopped to remove sheet from roll allowing air gradually to displace the solvent vapors? Is it not common practice to start and stop such machinery frequently? In Mr. Gumaer's apparatus, how long a period is ordinarily required for the vapor to pass through the explosive range? Is this instantaneous thereby avoiding possibility of explosion? Does Mr. Gumaer guarantee that no explosion can occur in his machine? I can cite a terrible explosion of a solvent recovery cabinet which occurred during the past year. While the cabinet was full of highly concentrated, non-explosive vapors, the electric power was interrupted and the machine shut down. Later, the machine operator, not an expert, opened a door in the cabinet admitting air and reducing the concentration of vapors to the explosive range. About this time along came a little spark, or something else, goodness knows what, with the result of a few lost lives and a totally wrecked building.

3. Here Mr. Gumaer admits possibility of negligence, the very overworked human trait. Suppose this fire should occur during the explosive range when there *is* sufficient oxygen to support combustion. What would happen?

4 and 5. If the partial vacuum causes more rapid evaporation as claimed in No. 4, why does it not do the same thing in No. 5 and dry out the "dope" more rapidly than in the open air, instead of keeping it wet? The partial vacuum must indeed be very small, considering that the sheet metal casing is fitted around revolving parts and irregular shaped housings, that doors are opened to insert and remove stock, and openings are provided in one machine for the entrance and passing out of fabric. Even if a partial vacuum is maintained in such a casing, there would be a continuous suction of air into the vessel.

Most assuredly I expect Mr. Gumaer to offer the opinion that I must be lacking in information on the merits and success of his apparatus, which perhaps may recover solvents more efficiently than any other. However, I am positive I do know this, that his apparatus contains at times explosive vapors, and some day a workman, not an expert, is going to do something to cause an explosion.

C. B. MITCHELLA

Rubber Manufacturers' Association of N. J. Meets

Optimistic discussion of business conditions was participated in on Monday, Feb. 13, by members of the Rubber Manufacturers' Association of New Jersey, at a dinner-conference at the Stacy-Trent, Trenton. Frederick R. Sayen and Charles E. Stokes of the Home Rubber Co., presided. Those in attendance were:

George T. Gretton and Horace M. Royal, Home Rubber Co.; I. Ely Reed, Mercer Rubber Co., Hamilton Square; John S. Broughton, United & Globe Rubber Co. and Globe Rubber Tire Manufacturing Co.; John A. Lambert and E. T. Comly, Acme Rubber Manufacturing Co.; A. M. Sawyer, Vulcanized Rubber Co., Morrisville, Pa.; S. Cadwalader, Whitehead Rubber Co.

Horace B. Tobin, Woven Steel Hose & Rubber Co.; Frank D. Voorhees, Voorhees Rubber Manufacturing Co., Jersey City, N. J.; William W. McMahan and C. Cavanaugh, Ajax Rubber Co.; Radcliffe Whitehead, Crescent Belting and Packing Co.; R. E. Stuart and Mr. Alexander, Empire Tire & Rubber Corp.; Clifford H. Oakley and Lawrence M. Oakley, Essex Rubber Co.; A. Boyd Cornell and Henry N. Young, Hamilton Rubber Manufacturing Co.; Frederick Daniels, Mr. Moore and Mr. Shelenberger, Quaker City Rubber Co., Frankford, Pa.

Holtite Co. to Enlarge Plant

The Holtite Manufacturing Co., Baltimore, Md., is planning the addition of a second story to its plant, which is a brick and concrete structure, 155 by 66 feet. This addition will double the present capacity of the plant which is now turning out 26,000 pairs of rubber heels a day.

The plant employs 100 men including eight salesmen. The Holtite company was organized about three years ago in Massachusetts. The factory was moved to Baltimore last June. According to Morris Eisen, president and business manager, and Albert A. Esterson, secretary and treasurer, the company has orders booked for capacity production for the next four months.

Columbia Tire & Rubber Co. Holds Annual Meeting

Stockholders of the Columbia Tire & Rubber Co., Mansfield, Ohio, at the annual meeting of the company on Feb. 4 elected the following directors: F. B. Black, G. W. Henne, William Isaly, W. G. Henne, E. O. Townsend, W. F. Henne, F. M. Bushnell, W. B. Martin and Samuel D. Islay. The report of business done during 1921 showed a substantial gain over that of 1920 The gross sales for the year amounted to $2,023,-445.72 which is an increase of forty-eight per cent.

During the year the company shipped 165,424 cord and fabric tires, an increase of eighty per cent over 1920. The number of tubes shipped was 120,831, an increase of seventy-five per cent.

The sales department is working on the theory that the Columbiana plant of the company will produce about 1000 fabric tires a day and the output of the Mansfield plant will number 640 fabric and 300 cord casings as well as 1000 tubes. It is predicted that gross sales for 1922 will be close to $3,000,000 and that the company will be able to market 100 per cent of its production.

Activities of the Seiberling Company and Its Subsidiary

The general offices of the Seiberling Rubber Company have been removed from the East Mill street location in Akron to the Portage plant at Barberton. Announcement is made that Oliver Wolcott, former assistant manager of merchandise distribution for the Goodyear Tire & Rubber Co., has been appointed manager of distribution and of traffic. E. R. Gibson, formerly in charge of tire production in the merchandise distribution department, will be his assistant.

H. L. Post, assistant sales manager of the Seiberling Rubber Company announced on January 7 that a branch office will be established at Minneapolis shortly to be followed by about a dozen others in various sections of the country.

The charter of the newly formed Lehigh Rubber Company was filed at New Castle, Pa., recently. The incorporators are: J. F. Seiberling, son of F. A. Seiberling; H. W. Smith, a former associate of Mr. Seiberling's when he was head of the Goodyear company; and Norman A. Martin, a New Castle lawyer. The company is capitalized at $750,000, and succeeded the defunct New Castle Tire & Rubber Co., which was purchased by F. A. Seiberling several months ago at a receiver's sale. H. W. Smith, who has been general manager of the Lehigh Rubber Company, has been elected president and treasurer; J. F. Seiberling has been named secretary, and Norman A. Martin, vice president.

C. T. Barnes to Manage Chicago Branch for Firestone

C. T. Barnes, for the past two years manager of the Indianapolis branch of the Firestone Tire & Rubber Co., Akron, has been appointed manager of the Chicago branch of that company. This branch, which is the headquarters for Illinois, Wisconsin and part of Indiana, is the second largest office of the company. Mr. Barnes started as a salesman at the Indianapolis branch of the Firestone company six years ago.

Racine Auto Tire Asks A Receiver

The Racine Auto Tire Co., Racine, Wis., filed a voluntary petition in bankruptcy on Feb. 9. Liabilities were listed at $1,453,216.22 and the nominal value of the assets was given at $1,642,836.22.

The decision to admit insolvency was decided upon by the board of directors as the best means of taking care of the interests of stockholders and creditors when it was discovered that necessary new capital could not be obtained, said H. O. Smith, manager of the company, in a statement.

L. J. Elliott is president of the company and A. M. Brehm, secretary.

The company had built up a large business in the manufacture of the widely advertised Horseshoe tires. Clarence H. Wright and his father had been active managers of the company up until the fall of 1920 when they resigned. H. O. Smith then became general manager.

Akron Rubber Mold & Machine Co. Announces New Mold

The Akron Rubber Mold & Machine Co. announce they are now making a 4⅜ in mold; this new size being designed especially to handle the 4 inch cord and 4½ inch fabric tires, with which so many makes of cars are now being equipped.

They also manufacture a 5½ inch mold, which will accommodate 5½ inch fabric or 5 inch cord tires, and which may be fitted with reducing shell to take care of 4 inch cord tires.

Through the use of "Akron Rubber-mold" equipment, the repairman with four molds can now take care of any tire, cord or fabris, from 2½ inch up to 5 inch cord inclusive.

Rubber Men in the Mutuals

At the annual meeting of the Cotton and Woolen Manufacturs' Mutual Insurance Company of New England, the Rubber Manufacturers' Mutual Insurance Company, and the Industrial Mutual Insurance Company, which were held successively on February 7 at the offices at 31 Milk street, Boston, Mass., five directors of each company were reelected for a term of three years. W. B. Brophy formerly assistant secretary, was promoted to be vice president and assistant treasurer of each of the companies, and C. H. Clough and H. P. Farwell were made assistant secretaries.

For the Cotton and Woolen Manufacturers' Mutual, the following-named officers were reelected: Eugene H. Clapp, president; Costello C. Converse, vice president; Benjamin Taft, secretary and treasurer. Directors reelected were B. F. Peach of Lynn, C. C. Converse of Boston, George B. Hodgman of New York, Lester Leland of Boston, C. A. Stone of Boston.

For the Rubber Manufacturers Mutual: Arthur H. Lowe was reelected president, George B. Hodgman, vice president, and Benjamin Taft, secretary and treasurer. Directors elected for another term are: George B. Hodgman of New York, C. T. Plunkett of Adams, Mass., A. H. Lowe of Fitchburg, Mass., J. P. Stevens of Newburyport, Mass., W. B. Brophy of Boston.

For the Industrial Mutual: C. T. Plunkett was reelected president; Franklin W. Pitcher, vice president, and Benjamin Taft, secretary and treasurer. Directors reelected are: C. A. Stone of Boston, C. C. Converse of Boston, F. W. Pitcher of Easthampton, E. H. Clapp of Boston, A. H. Lowe of Fitchburg, Mass.

Among the officers and directors reelected are several well known in the rubber industry. Eugene H. Clapp is president of the E. H. Clapp Rubber Co., reclaimers, of Boston, and of the New Jersey Rubber Co., reclaimers, of Lambertville, N. J. Lester Leland of Boston is vice chairman of the Board of Directors of the United States Rubber Co. George B. Hodgman is president of the Hodgman Rubber Co., Tuckahoe, N. Y. Franklin W. Pitcher is president of the Easthampton Rubber Thread Co., Easthampton, Mass. Costello C. Converse of 201 Devonshire St., Boston, has been well-known in the trade for many years.

A Correction

The Rubber Association of America informs us that an error was made in their report showing the comparative statement of importations of crude rubber for January 1921 and 1922. The January 1920 figures were given out in error in place of the 1921 figures.

The corrected table is given below:

	Jan.-1921	Jan.-1922
Plantations	12,816	20,774
Paras	1,312	916
Africans	47	161
Central	3	16
Guayule	—	—
Manicoba and Matto Grosso	—	—
	14,177	21,867

MARKETS

Cottons and Fabrics

NEW YORK, MARCH 10, 1922

The wide fluctuations in the cotton market continues to hamper business at the cotton goods mills and the extensive labor troubles in the New England mills following wage reductions subjects the textile trade to further difficulty. During January, however, the cotton goods industry was well maintained and showed a slight increase as the consumption of cotton reported by the Bureau of the Census would indicate; 526,552 bales being consumed as against 511,800 bales in December. Some important factors express a confidence in the raw material market and feel that prices will hold firm at the present levels. There has also been considerable interest shown in the increased strength of listed textile shares as indicating a general belief that wage and price readjustment will be completed without any serious trouble; that the closing of the New England mills as a result of strikes is a temporary affair and will not have any long extended effect upon the goods market. Business statistics received by the Department of Commerce show that in the returning confidence along nearly every line of industry the textile industry has been especially favored.

Exports of raw cotton from the United States amounted to 475,910 bales in January as compared with 639,825 bales in December. Middling Uplands continues at 18.70 cents.

The following were the opening, highest, lowest and closing prices on the New York Cotton Exchange.

	Open.	High.	Low.	Close
March	18.30	18.37	18.15	18.35@18.37
May	17.95	18.11	17.86	18.07@18.10
July	17.13	17.38	17.10	17.34@17.38
Oct.	16.45	16.70	16.45	16.69
Dec.	16.33	16.50	16.32	16.50
Jan.	..	..	..	16.35

Will Oppose "Duck Branding" Legislation

The Association of Cotten Textile Merchants of New York through its Fabric Committee has joined with the Cotton Duck Association in a protest against duck branding legislation now pending in various state legislatures. A resolution was passed in which it was stated that the passage of the proposed act would be very injurious to the rubber industry and the tire industry in which there is no need for a change of the present standards. Fred S. Bennett of Fred S. Bennett, Inc., was appointed a committee of one and will cooperate with the Fabric Committee of the Cotton Textile Merchants in opposition to the proposed legislation concerning the marking of weights on cotton duck. The resolution follows:

The Association of Cotton Textile Merchants of New York is in favor of such action as will prevent misbranding or misrepresentation of cotton fabrics, but is opposed to the Slacer Act or any similar bill having to do with the marking of weights on cotton ducks, as that bill requires a new and unnecessary standard on many kinds of ducks which could only be productive of misunderstanding and confusion without affording any real protection to the consumer. The proposed Act would include many industries such as the rubber industry, the tire industry, and others, in which there is no need for a change of their present standards and which would be very injuriously affected by the passage of the bill.

Furthermore, this Association has heretofore gone on record in favor of, and strongly approves, the Honest Merchandise Act of 1921, a bill introduced in the House of Representatives by Mr. Rogers of Massachusetts(H.R. 16, 67th Congress, first session) known as "A bill to protect the public against fraud by prohibiting the manufacture, sale, or transportation in interstate commerce of misbranded, misrepresented, or falsely described articles, to regulate the traffic therein, and for other purposes." We believe that the provisions of the Honest Merchandise Act are equitable and just and that they will afford to the consumers of cotton duck the protection which they desire and to which they are entitled, without interfering with established standards and manufacturing methods, or legitimate merchandising.

EGYPTIAN COTTON

There has been some improvement in the market for Egyptian cotton. Medium uppers are quoted at 27¾ cents for No. 10; 27 cents for number 12 and 26½ cents for No. 14. Medium sakels are quoted 31¼ cents for No. 49, 35 cents for No. 46 and 38¼ cents for No. 42. There is a steady demand for the grades generally used for tire fabrics. A comparison of stocks and consumption of Egyptian cotton shows an increase from 59,294 bales on Oct. 31, 1921, to 88,688 on January 31, 1922. The latter total compares with 104,332 bales in stock on January 31, 1921. The consumption for January, 1922, was 14,433 bales which compares with only 4,986 for the same month last year.

TIRE FABRICS

The market for tire fabric continues in the same dull condition that has characterized it during the past five weeks. During the last week of 1921 and the early days of this year there was heavy buying by the larger tire companies and since then the orders, as reported by mill representatives, have been for exceedingly small lots. As a result no change is reported in the price situation and such prices as are quoted below are nominal and represent what has been heard in trade centers. The market continues strictly a buyers market with very little inclination to anticipate possible requirements in the near future.

The following prices were heard in the trade:

SQUARE WOVEN

17¼-ounce Egyptian uppers, combed,	lb.	.70	@	.75
17¼-ounce Egyptian uppers, carded,	lb.	.70	@	—
17¼-ounce Sakellarides, combed,	lb.	.85	@	—
17¼-ounce Sakellarides, carded,	lb.	.75	@	.78
17½-ounce Peeler, combed,	lb.	.70	@	—
17½-ounce Peeler, carded,	lb.	.50	@	—

CORD FABRICS

Combed Sakellarides	lb.	.85	@	.90
Carded Sakellarides	lb.	.80	@	.83
Combed Peeler	lb.	.70	@	.75
Carded Peeler	lb.	.55	@	—
Combed Egyptian uppers	lb.	.75	@	—
Carded Egyptian uppers	lb.	.75	@	—

SHEETINGS, DUCKS

Sheetings—There has been more activity in this market and sales have been made quite freely for future delivery. Business has been in better condition than at any time since the first of the year. For 40 inch, 3.75 yard, 8½ cents was paid and 40 inch 3.60 yard was quoted at 10¼ cents net.

Ducks—A steady and quiet market prevails. Single filling was quoted at 13½ at 16½ cents according to grade and double filling 16 at 17½ cents. Enameling duck could be had at 30 at 34 cents according to width.

SHEETINGS

40-inch 2.50-yard	yd.	.12½	@	—
40-inch 2.85-yard	yd.	.10½	@	.10¾
40-inch 3.15-yard	yd.	.12	@	—
40-inch 3.60-yard	yd.	.10¼	@	—
40-inch 3.75-yard	yd.	.08½	@	—
40-inch 4.25-yard	yd.	.08	@	—

DUCKS

Belting	lb.	.36	@	—
Hose	lb.	.34	@	—
Enameling	lb.	.30	@	.34
Shoe Ducks	lb.	.40	@	—
Single filling	lb.	.13½	@	.16½
Double filling	yd.	.16	@	.17½

BURLAPS
(Carload Lots)

7 -ounce 40-inch	yd.	3.90	@	3.85
7½-ounce 40-inch		3.95	@	3.95
7½-ounce 45-inch		4.65	@	4.80
10 -ounce 40-inch		4.05	@	5.20
10 -ounce 45-inch		4.85	@	5.00
8 -ounce 45-inch		4.75	@	4.70
10 -ounce 45-inch		6.00	@	6.25
10½-ounce 40inch		4.10	@	5.25

DRILLS

37-inch 3.25-yard	yd.	.09½	@	—
37-inch 2.75-yard	yd.	.11	@	.11¼
37-inch 3.00-yard	yd.	.10	@	—
37-inch 3.50-yard	yd.	.09½	@	—
37-inch 3.95-yard	yd.	.08½	@	—

OSNABURGS

30-inch 7-ounce		.08	@	.09
40-inch 7-ounce		.10½	@	.10¾

Chemicals and Compounding Materials

THE GENERAL MARKET—NEW YORK, MARCH 10, 1922—The market for industrial chemicals continues remarkably strong in view of the restricted demand and such price changes as have been made are of minor importance. Buyers, for the time, appear to be unwilling to take on any extensive quantities of material the result being unusually light stocks in the hands of both consumers and producers which is one of the reasons for the continued firmness of the market. Domestic producers are watching with interest the rising tendency of foreign exchange which permits them to do business on a more favorable basis as a strong foreign exchange has the inevitable result of increasing the prices of foreign products. Both producers and dealers look confidently to brighter days ahead as the spring season advances.

ACCELERATORS

Organic

Aldehyde ammonia, crystals	lb.	$ .90	@ .95
Aniline oil, bulk basis	lb.	.16½	@ .18
Excellerex	lb.	.55	@ —
Formaldehyde-aniline	lb.	.45	@ .50
Hexamethylene-tetramine (powdered)	lb.	.72½	@ .75½
Paraphenylene-diamine	lb.	1.60	@ 1.75
Thiocarbanilid	lb.	.40	@ —
Vulcocene	lb.	.35	@ —

Inorganic

Lead, dry red bbls.	lb.	.08	@ .08¼
Lead, sublimed white	lb.	.06½	@ —
white, basic carbonate	lb.	.06½	@ .07½
Litharge, commercial, bbls.	lb.	.07½	@ .07¾
Lime, hydrated	lb.	.02	@ .02½
Magnesia, calcined, extra light	lb.	.45	@ —
heavy	lb.	.05½	@ —
Magnesite, powdered	ton	50.00	@ 65.00

COLORS

Blacks

Carbon Black	lb.	.10½	@ .20
Micronex	lb.	.12	@ .17
Lamp black	lb.	.17	@ .45
Bone "	lb.	.05½	@ .07½
Drop "	lb.	.07½	@ .16
Ivory "	lb.	.15	@ .45

Blues

Prussian	lb.	.50	@ .55
Ultramarine	lb.	.10	@ .35
Cobalt	lb.	.23	@ .30

Browns

Iron oxide	lb.	.05	@ .16
Sienna, Italian, raw and powdered	lb.	.05½	@ .14
Umber, Turkey, raw and powdered	lb.	.04¼	@ —

Greens

Chrome, light, c. p.	lb.	.30	@ .32
medium	lb.	.35	@ .36
dark	lb.	.36	@ .45
commercial	lb.	.12	@ —

Reds

Antimony, crimson	lb.	.35	@ .36
golden	lb.	.21	@ .27
red	lb.	.20	@ .22
Indian, English, pure	lb.	.12	@ .15
Oxide, copperas, pure	lb.	.10	@ .14
reduced	lb.	.11½	@ .12½
Para toner	100 lb.	1.40	@ —
Toluidine tone	lb.	2.50	@ —
Tuscan	lb.	.17½	@ .44
Venetian	lb.	.03½	@ .06½
Vermillion, quicksilver, English	lb.	.85	@ .90
domestic	lb.	.25	@ .30

Whites

Albalith	lb.	.06	@ .06½
Aluminum bronze	lb.	.55	@ .60
Lithopone, domestic (factory)	lb.	.06¼	@ —
Zinc oxide, American Horse Head Special	lb.	.08	@ .08½
XX red	lb.	.07½	@ .08
American Azo: ZZZ (lead free)	lb.	.07½	@ .08
ZZ (under 5 per cent leaded)		.07¼	@ .07¾
Z (8-10 per cent leaded)		.07	@ .07½
Zinc oxide, French process, White seal	lb.	.11	@ .11¼
Green seal	lb.	.09¾	@ .10¼
Red seal	lb.	.08¾	@ .09¼

Yellows

Cadmium sulphide	lb.	1.25	@ 1.50
Chrome, light, c. p.	lb.	.17	@ —
dark	lb.	.17	@ —
medium	lb.	.17	@ —
Ocher, French	lb.	.02¼	@ .03
domestic	lb.	.02	@ .02½
Zinc chromate	lb.	.33½	@ —

COMPOUNDING INGREDIENTS

Aluminium flake	ton	25.00	@ 29.50
hydrate	ton	20.00	@ 22.00
Ammonium carbonate, lump	lb.	.10¼	@ .11¼
Barium dust	ton	100.00	@ —
Barytes, southern off-color	ton	15.00	@ 17.00
Western, prime white	ton	23.00	@ —
Basofor	lb.	.04½	@ —
B-ta-naphtol	lb.	.29	@ —
Blanc fixe, dry, f.o.b. works	lb.	.04¼	@ .04½
Chalk, precipitated, extra light	lb.	.03½	@ .04¼
heavy	lb.	.02½	@ .03¼
Clay, China, domestic	ton	7.50	@ 9.00
imported	ton	16.00	@ 21.00
Dixie	ton	22.00	@ 32.00
Blue Ridge	ton	20.00	@ 32.00
Fuller's Earth, powdered	ton	22.00	@ 25.00
Fossil flour	ton	60.00	@ ..
Glues, extra white	lb.	.30	@ .40
medium white	lb.	.22	@ .26
cabinet	lb.	.18	@ .30
cabinet low grade	lb.	.15	@ .18
common bone	lb.	.08½	@ .14
Graphite flake, bbls.	lb.	.14	@ .20
powdered	lb.	.04	@ .10
Infusorial earth, powdered	ton	60.00	@ —
bolted	ton	65.00	@ —
Mica, powdered	lb.	.15	@ —
Rotten Stone (powdered)	lb.	.02½	@ .04½
Silica (aluminum)	ton	12.00	@ 35.00
Soapstone, powdered	ton	.15	@ .20
Starch, powdered corn	cwt.	2.32	@ 2.60
Talc, domestic	ton	18.00	@ 20.00
French	ton	22.50	@ 30.00
French, high grade	ton	40.00	@ 45.00
Italian	ton	.44	@ .55
Terra Alba, American No. 1	cwt.	1.85	@ 2.00
American No. 2	cwt.	1.25	@ ..
Tripoli	lb.	.02½	@ —
Whiting, commercial	cwt.	1.15	@ —
Quaker	ton	13.00	@ 15.00
English cliffstone	cwt.	1.75	@ 2.00
glider's bolted	cwt.	1.20	@ 1.35
Paris white American	cwt.	1.25	@ 1.35
Zinc Oxide— 5 per cent leaded		.07¼	@ .07¾
10 per cent lead sulphate	lb.	.07	@ .07½
20 per cent lead sulphate	lb.	.07	@ .07½
35 per cent lead sulphate	lb.	.07	@ .07½

(Also see whites)

MINERAL RUBBER

Gilsonite	ton	70.00	@ —
Genasco (factory)	ton	50.00	@ —
Hard hydrocarbon	ton	35.00	@ 38.00
Soft hydrocarbon	ton	33.00	@ 35.00
Pioneer M.R.	ton	36.00	@ 54.00
320 M. P. hydrocarbon (c. l. factory)	ton	47.50	@ 50.00
300/310 M. P. hydrocarbon (c. l. factory)	ton	42.50	@ 45.00
Syntro, granulated, M.R. (factory)	ton	54.50	@ 64.50

SOFTENERS

Acids

Acetic, 28 per cent	cwt.	2.50	@ 3.00
Carbolic (phenol)	lb.	.11½	@ .16
Cresylic, 97 to 99 p.c.	gal.	.50	@ .60
Muriatic, 20 degrees	cwt.	1.25	@ 1.50
Nitric, 36 degrees	cwt.	5.00	@ 6.00
Sulphuric, 66 degrees	ton	16.00	@ 17.00
60 degrees, bulk	ton	10.00	@ 11.00
Tartaric, crystals	lb.	.30	@ —

Alkalies

Caustic soda, 60 p.c.	cwt.	2.50	@ 2.57½
Soda ash, 48 p.c.	cwt.	1.27½	@ 1.47½

Oils

Castor, No. 3, bbls.	lb.	.10½	@ —
Corn, crude, bbls.	lb.	.09½	@ —
refined	lb.	.11¼	@ —
Chinawood, bbls.	lb.	.14	@ —
Cottonseed	lb.	.10	@ —
Glycerine, c.p. drums	lb.	.16½	@ .17
Linseed, domestic	lb.	.86	@ —
imported	lb.	.72	@ .73
Palm, Niger	lb.	.06½	@ .07
Lagos	lb.	.08	@ .08¼
Peanut, domestic, crude	lb.	.09½	@ .10
Pine, steam distilled over 930° sp. gr.	gal.	1.00	@ —
Rapeseed, refined	gal.	.86	@ .88
blown	gal.	.92	@ .95
Rosin, first rectified	gal.	.37	@ —
second rectified	gal.	.39	@ —
Tar, commercial	gal.	.31½	@ —
Soya Bean, crude, bbls.	lb.	.09¼	@ .09½
" " refined	lb.	.10¾	@ .11

Resins and Pitches

Cumar resin, hard	lb.	.09	@ .12
Cumar resin, soft	lb.	.09	@ .12
Tar, retort	bbl.	9.00	@ —
kiln burned	bbl.	10.00	@ —
Pitch, Burgundy	lb.	.05	@ .06
coal tar	ton	01½	@ —
pine tar		03½	@ —
Rosin, grade K	bbl.	5.70	@ —
Strained	bbl.	6.00	@ —
Shellac, fine orange	lb.	.80	@ —

Solvents

Acetone, drums, c.p.	lb.	.12½	@ .13
Alcohol, denatured, No. 1	gal.	.38	@ .39
Methyl, 95 per cent, drums	gal.	.54	@ .56
Ethyl, 190 proof, bbls.	gal.	4.70	@ 4.80
Benzol, 90 per cent	gal.	.27	@ .32
pure	gal.	.32	@ .34
Carbon bisulphide	lb.	.06	@ .07
tetrachloride	lb.	.09½	@ .11½
Dimethylaniline	lb.	.38	@ .45
Motor gasoline, steel bbls.	gal.	.27	@ —
Toluol, pure	gal.	.30	@ .35
Turpentine, spirits	gal.	.88	@ —
wood	gal.	.78	@ .80
Xylol, pure	gal.	.45	@ .51
commercial	gal.	.31	@ .38

Waxes

Beeswax white, pure	lb.	.35	@ .39
Carnauba, No. 1	lb.	.44	@ .46
Ceresin, white	lb.	.09	@ .10
Bayberry	lb.	.20	@ .22
Montan, crude	lb.	.05	@ .05½
Ozokerite, hard, pure	lb.	.26	@ .27
Paraffin	lb.	.08	@ .15
Petrolatum, amber, bbls.	lb.	.04½	@ —
dark amber	lb.	.04	@ —

SUBSTITUTES

Black	lb.	.07	@ .14
White	lb.	.08	@ .16
Brown	lb.	.07	@ .14
Brown factice	lb.	.08¼	@ .15¼
White factice	lb.	.09	@ .16½

VULCANIZING INGREDIENTS

Lead, black hyposulphite (black hypo)	lb.	.30	@ .42
Orange mineral, domestic	lb.	.11	@ .13
Sulphur chloride (jugs)	lb.	.20	@ —
Sulphur flour	cwt.	2.35	@ 3.15
Bergenport (c.l.)	cwt.	2.55	@ —
superfine, 99½ p.c.	cwt.	2.00	@ 2.90

Zinc Oxide—There has been a steady increase in the demand particularly due to business coming from the tire industry. While this improvement has been continuous from week to week it has not yet affected the price schedule of the domestic article. Producers still quote red seal, 8¾ at 9¼ cents; green seal, 9¾ at 10¼ cents; white seal, 11 at 11¼ cents. Supplies of imported material are not very plentiful due perhaps to the uncertainty with respect to the tariff.

Lithopone—Demand keeps pace with production and producers are operating their plants to capacity. Foreign material continues to come in and some lots of particularly good quality bring 5¼ cents ex-warehouse and off-color, 4¾ cents ex-warehouse. The price of domestic continues at 6 cents per pound in bags and 6¼ cents in barrels, car lots.

Litharge—Leading producers have made no changes in quotations and business continues quiet with just routine demand. Quotations follow: casks, 7½ at 7½ at 7¾ cents per pound; 100 pound kegs less than 500 pounds, 12¼ cents; 500 to 2000 pounds, 11 cents.

Soda Ash—The market was without feature and business was confined to small quantities. There was just as little interest in the imported article as in the domestic material. For domestic $1.27½ for bags, 100 pounds, 48 per cent basis and barrels, $1.47½.

Caustic Soda—Prices were quite steady with the domestic demand for small quantities. The demand for export continues to increase. Producers quoted 2.50 at 2.57½, basis 60 per cent.

Barytes—The recent reduction in price has produced a firm market and the demand is good with no disturbance from the foreign material that continues to come in. The price of Western was unchanged at $23.00 f.o.b. works.

Toluol—The demand has been excellent with pure quoted from 30 cents to 35 cents per gallon. Supplies are not heavy on account of the shortage of benzol.

Benzol—The price of the pure grade which has been quite scarce owing to the heavy demand was advanced and late quotations were 32 at 34 cents per gallon. The price for the 90 per cent remained at 27 at 32 cents per gallon.

Whiting—Prices remained unchanged and steady at the last quotations. Domestic is quoted at $14.50 f.o.b. works in carlots; less than carlots at $23.00. English cliffstone is offered at $24.00 to $25.00 per ton.

Blanc Fixe—Demand is better and prices are firm. Some imported material is coming in right along but is quickly absorbed by the market. Pulp is quoted at $40.00 at $50.00 per ton and dry material at 4¼ cents to 4½ cents.

Talc—An increase was noted in the demand and the market presented a firmer tone. Prices continued unchanged with domestic at $18.00 to $20.00 per ton.

Crude Rubber

NEW YORK, MARCH 3, 1922

During the last half of February the crude rubber market passed through another period of slight depression, prices having fallen off about 1¼ cent from the quotation of our last report dated Feb. 11. On March 1 ribbed Smoked sheets were quoted at 14¼ cents, and some business was reported at prices slightly lower. At the date of writing the market appears to have turned upward again and exhibits a degree of stimulation, ribs being quoted at 15 to 15¼ cents.

In searching for the cause of the continued depression in crude rubber prices since last December, the opinion is advanced that importers, dealers and manufacturers alike placed substantial orders in the primary markets last fall when the market began to advance with the result that greatly increased supplies of crude rubber have been arriving ever since. During 1921 up until October the monthly importations of Plantations averaged about 12,000 tons, but in October this jumped to something over 21,000 tons. November importations were almost 19,000 tons, December's 23,596 tons, January's 20,774, and it is estimated that February's importations will run up to 30,000 tons.

It seems that these increased importations are somewhat in excess of the actual needs of the manufacturers as production of manufactured goods has not increased very rapidly. What interest has been shown by manufacturers has been concentrated on the last half of the year rather than the first half.

Singapore and London markets are reported weak. Stocks in London on Feb. 15 were 67,288 tons as compared with 58,010 tons a year ago.

Exchange March 2 closed Sterling sight 4.42½, cables 4.42⅝.

Quotations on the various grades on this date are as follows:

Plantations			
Ribbed Smoked Sheets spot	.15	@	.15¼
April	.15¼	@	.15½
April/June	.15¾	@	.16
July/Sept.	.17	@	.17¼
July/December	.17½	@	.18
October/December	.18	@	.18½
Smoked sheets plain, spot	.13¾	@	.14
First Latex Pale Crepe, spot	.15	@	.15¼
April	.15¼	@	.15½
April/June	.15¾	@	.16
July/Sept.	.17	@	.17¼
July/Dec.	.17½	@	.18
October/December	.18	@	.18½
Amber Crepe No. 1	.14¾	@	.15
" " " 2	.14¼	@	.14½
" " " 3	.13¾	@	.14
Grand Central Crepe	.14½	@	.14¾
Light clean thin Brown Crepe	.14½	@	.14¾
Clean Thin Brown	.14	@	.14½
Commercially Clean thin	—	@	—
Brown Crepe	.13¼	@	.14
Rolled Brown Crepe	.12½	@	.12¾
Paras			
Madeira Fine	.18¼	@	.18¾
Acre Fine	.17¾	@	.18
Up-river Fine	.17¼	@	.17¾
Up-river Medium	.16¾	@	.17
Up-river Caucho ball	.12	@	.12¼
Up-river Coarse	.12½	@	.13
Islands Fine	.16¼	@	.16½
Islands, Medium	.15½	@	nom.
Islands Coarse	.10	@	.10¼
Cameta	.09¼	@	.10
Xingu Ball	.10¼	@	.11
Tapajos fine, spot	.16½	@	.17
Pontianac			
Prime Pressed	.13	@	.13¼
Plantation	—	@	.07½
Bangermassin	.08	@	.08¼
Palembang	.10	@	.10¼
Siak Gutta Percha	.18¾	@	.19
Prime Macassar	2.75	@	2.85
Balata			
Panama Block	.30	@	.40
Surinam Sheets	—	@	.67
Columbia Block	.42	@	.43
Venezuela Block	.54	@	.55

Reclaimed Rubber

NEW YORK, MARCH 3, 1922

The decline in the price of crude rubber has been reflected in the continued inactivity of the reclaimed market. Although reclaimers report little demand their attitude is still one of conservative optimism; no large orders are to be expected until crude rubber prices advance to twenty cents. Many reclaiming plants are operating at twenty to thirty per cent capacity, and the influence of the gradual improvement in business being experienced by the large rubber manufacturers has not as yet been felt in the reclaiming branch of the industry.

Quotations remain practically unchanged since our last report. They are nominally as follows:

Standard Reclaims			
Floating	$.12	@	$.13
Friction	.12	@	.13
Boots and Shoes	.10	@	.10½
Boots and Shoes (washed)	.13	@	.14
Mechanical	.08	@	.10
Hose	.10½	@	.11½
Tires, truck	.08	@	.09
Tires, auto	.09	@	.10
White	.13	@	.14

Scrap Rubber

NEW YORK, MARCH 3, 1922

The market has been very quiet during the past fortnight. Reclaimers are reported to be using the stocks in their own warehouses for current needs, and are waiting for a further drop in the price of boots and shoes, which it is believed, will come with the spring.

With the exception of a few orders for limited lots of inner tubes, no sales of volume have been reported. Consequently, dealers are accumulating large stores of practically all grades. Strangely enough, the continued weakness of the crude rubber market has had no further depressive effect on scrap rubber. Dealers believe that the prices of many grades have touched rock bottom. Although boots and shoes have declined slightly, the current market prices of other grades remain practically unchanged.

Quotations of this date are nominally as follows:

Auto tire peelings	.01¼	@	.01½
Standard White auto	.01¼	@	.01½
Mixed auto	.00¾	@	.00⅞
Bicycle tires	.00¼	@	.00⅜
Solid truck tires	.00¾	@	.01
Boots and shoes	.02½	@	.02¾
Arctics, trimmed	.02	@	.02¼
Arctics, untrimmed	.02	@	.02½
Inner tubes, No. 1	.03¼	@	.03½
Inner tubes, compounded	.02½	@	.02⅝
Battery jars, black compounded	Nominal		
Battery jars No. 1 bright fracture	Nominal		
Inner tubes, red	.02½	@	.02⅝
Heels and pads	Nominal		
Black mixed	.00¼	@	.00⅜
Garden hose	.00¼	@	.00⅝
Air brake hose	.00½	@	.00¾
Red packing	.01	@	.01¼
Red mixed rubber	.01¾	@	.02
White mixed rubber	.01¾	@	.02

American Rubber Patents

1,406,919—Albert Boecler, Malmo, Sweden, assignor to Benzine Condensation Co. Inc., New York City. Machine For the Production of Rubber-Coated Textiles and The Like.

1,406,478—Sidney Charles Mote, London, England, assignor of one-half to Archer Philip Crouch, London, England. Rubber-Covered Tank For Containing Inflammable Liquids.

1,406,358—George Ferguson, Wollaston, Mass., assignor, by mesne assignments to United Shoe Machinery Corp., Paterson, N. J. Apparatus For Reducing Rubber Soles.

1,406,630—Mike B. Flaherty, Steubenville, Ohio, assignor of one-half to John L. Sober, Steubenville, Ohio. Tire.

1,406,855—William B. Harsel, Akron, Ohio, assignor to The Goodyear Tire & Rubber Co., Akron, Ohio. Apparatus For Making Tire Beads.

1,406,433—Robert H. Atcheson, Hartford, Conn., assignor to Henry J. Doughty, Providence, R. I. Tire Casing Vulcanizing Mold.

1,406,895—Otto Reifurth, Bochum, Germany. Apparatus For Rolling Tires.

1,406,555—Samuel Otis Hahn, Pueblo, Colo. Single-Tube Tire.

1,406,640—William A. Gram and Martin F. Gram, Welland, Ontario, Canada. Expansible Core For Vulcanizing Tires.

1,405,998—John R. Gammeter, Akron, Ohio, assignor to The B. F. Goodrich Co., New York City. Method of Making Rubber Cylinders.

1,406,160—Louis E. Klug, Indianapolis, Ind., assignor to Rub-Tex Products Inc., Indianapolis, Ind. Process of Manufacture of Rubber Jars.

1,405,888—Leland T. Bailey, Lynchburg, Va. Tire.

New Incorporations

NEW YORK

J. A. Desmond & Co., Inc., to import and deal in crude rubber and gutta percha. $600,000. Principal office, New York City. Incorporators: T. A. Desmond and H. S. Delanie—Montclair, New Jersey; H. M. Tienken, 11 Botanic Place—Flushing, New York.

Community Distributing Corporation, to deal in tires. $1,000. Principal office, New York City. Incorporators: T. L. Healey, 130 West 42nd street and R. A. Curtis, 398 Columbus avenue—New York City.

Franklin Tire Corporation, to manufacture and sell tires. $5,000. Principal office, New York City. Incorporators: H. Fried, 1540 Broadway and S. Rubin, 220 Audubon avenue—New York City; B. Steineck, 126 38th street—Brooklyn, New York.

Keystone Rubber Heels Corporation, to manufacture rubber heels and other rubber products. $500,000. Principal office, Brooklyn, New York. Incorporators: W. L. Lawrence and K. M. Gove—both of Concord street, Brooklyn, New York; H. A. Powell, Woodhaven, Long Island, New York.

OHIO

Coverall Tire Sales Co., to manufacture and deal in tires and tubes. $15,000. Principal office, Cleveland, Ohio. Incorporators: C. F. Ross, J. P. Taggart, W. L. Spring, A. A. Sayre and H. K. Bell—of Cleveland, Ohio. The Grace Tire Co., to distribute Carlisle rope tires for northeastern Ohio and Auburn certified tires for Cuyahoga County, Ohio. $25,000. Principal office, Cleveland, Ohio. C. F. Kline, president and general manager; A. W. Schlosser, vice president and service manager; W. E. Laney, secretary.

The Bridale Sales Co., to deal in tires and tubes. $5,000. Principal office, Cleveland, Ohio. Incorporators: L. M. Sampson, J. R. Spingart, L. W. Hooley.

The Ajax Tire Co., to manufacture and repair tires. $30,000. Incorporators: W. J. Jackson, W. W. Robertson, E. W. Bailey, A. J. Batter and E. F. Peters.

DELAWARE

Johnvone Tire Stores Co. $250,000. Representative, E. A. Buckley, Syracuse.

The Pollock Pen Co., to deal in fountain pens. $500,000. Principal office, Wilmington, Delaware. Incorporators: T. L. Crotean, M. A. Bruce and C. H. Blaske all of Wilmington, Delaware. Delaware Agent, Corporation Trust Company of America, Du Pont Building, Wilmington, Delaware.

L. R. Whitman Rubber Co., to manufacture and deal in rubber goods. $15,000. Principal office, Wilmington, Delaware. Incorporators: C. T. Carter, F. J. Rolf, R. L. Liles.

J. G. Myers Manufacturing Co., to manufacture and deal in rubber goods. $5,000. Incorporators: J. C. Tuttle, Lawrence Pierce and J. R. Stevens—Wilmington, Delaware.

KENTUCKY

The Lexington Tire Co., to deal in automobile tires and accessories. $3,000. Incorporators: B. S. Kenney and S. W. Mastin, Frankfort; J. C. Bridges, Louisville—all in Kentucky. Principal office, Lexington, Kentucky.

MARYLAND

The Maxotire Co., to manufacture and deal in tires, tubes and accessories. $600,000. Principal office, the Equitable Building, Baltimore, Maryland. Incorporators: H. F. Priester and J. P. Tarr and F. Arnold—all of Baltimore, Maryland.

MASSACHUSETTS

Neptune Garment Co., to manufacture rubber coats. $10,000. Principal office, Boston, Massachusetts. M. Lefkowitz, president, 16 Glennay street; S. Volonsky, treasurer, 22 West View street; Dorchester, Massachusetts; G. Atkins, secretary, 19 Beach Road; Winthrop, Massachusetts.

Backbay Tire Co., to buy and sell automobile tires. $25,000. Principal office, Boston, Massachusetts. M. D. Downey, president, Westfield street, Dedham; F. C. Fais, treasurer, 382 Ashmont street, Dorchester; K. G. Ryan, clerk, Bow street, Newton Falls—all in Massachusetts.

The Automobile Owners Tire Service Association, to manufacture and sell tires and accessories. Principal office, Boston, Massachusetts. A. S. Haber, president and treasurer; J. J. Melen, clerk; G. Simon, director—all of 22 School street, Boston, Massachusetts.

NORTH CAROLINA

R. Sims, Inc., to buy and deal in tires, tubes and accessories. $25,000. Principal office, Charlotte, North Carolina. Incorporator: R. Sims.

NEW JERSEY

The Mason Tire Co., to manufacture, buy sell and deal in tires and tubes. $125,000. Principal office, 230 Halsey street, Newark, New Jersey. Incorporators: A. J. Holle, 134 Monmouth Road, Elizabeth, New Jersey; W. J. Holle, 311 Mount Prospect avenue, Newark, New Jersey; E. E. Holle, 63 Linden avenue, Arlington, New Jersey.

Name Change

The Wolverine Rubber Company to Wolverine Climax Company; Detroit Michigan. Capital, $1,000,000.

Trade Marks Applied For

[The following are trade-mark applications pertinent to our field pending in the United States Patent Office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister Building, Washington, D. C. or Bush Building, 130 West 42 Street, New York, trade-mark specialists. As an additional service feature to its readers this Journal gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.]

X. L. O. in center of circle—No. 154,866. Dovan Chemical Corporation, Wilmington, Del. For An Accelerator for Vulcanization of Rubber.

GENUINE MARATHON WASHABLE FLEXYDE AVOID IMITATIONS NONE GENUINE WITHOUT THIS TRADEMARK and a picture of a runner on black background—No. 146,720. The Marathon Tire & Rubber Company, Cuyahoga Falls, Ohio. For Rubber Belts for Supporting Outer Garments.

A in center of circle, THE ANCHOR PACKING CO. on rim surrounded by series of circles—No. 144,892. The Anchor Packing Company, Philadelphia, Pa. For Machinery Packing Composed of Asbestos and Rubber.

Silhouette of a stork, enclosed in a curved triangular border—No. 121,995. The Stork Contractors Export Corp., New York, N. Y. For Composition Rubber Roofing.

CLIMAX—No. 149,268. The Climax Rubber Co., Columbus, Ohio. For Automobile Tires of Rubber and of Rubberized Fabric, Inner Tubes for Tires, Tire Liners, and Tire Patches.

TEST-O-CAP—No. 137,775. The Griest Manufacturing Company, New Haven, Conn. For Pressure Gages for Pneumatic Tires and other Purposes.

PERMEO—No. 147,532. Jean Freederic Schweizer-Caillaux, Vincennes, France. For Shoes of Leather, Rubber, Fabric and of Leather and Fabric Combined.

JACKSON'S IMPERVO on rim of tire with picture of athlete standing on tires in center—No. 156,225. Jackson Laboratories, Indianapolis, Ind. For Puncture-Sealing Composition and Preservative for Pneumatic Tires.

ACE—No. 154,469. Ace Specialties Corp., New York. For Surgeons' Rubber Gloves.

ARCH CONFORMER—No. 156,802. Thomas G. Plant Company, Boston, Mass. For Boots, Shoes and Slippers of Rubber.

MONEY SAVER—No. 155,116. The Porteous Products Corp., Inc., New York, N. Y. For Patches for Rubber Goods.

MASTER—No. 146,025. The Manhattan Rubber Mfg. Co., Passaic, N. J. For Rubber Belting and Rubber Hose.

ELDORADO—No. 157,917. Joseph Dixon Crucible Company, Jersey City, N. J. For Rubber Erasers.

RANGER—No. 155,967. The Ideal Tire and Rubber Company, Cleveland, Ohio. For Vehicle Tires of Rubber and Rubber and Fabric, Inner Tubes, Tire Casings and Shoes, and Repair Parts for Use in Connection with the Foregoing—Namely, Lace-On Boots, Hook-On Boots, Reliners, Blow-Out Patches, Cementless Patches, Cord Patches and Valve Patches.

KELLY KATS with silhouette of a cat on either side and the words THE TIRES WITH NINE LIVES—No. 153,142. Kelly-Springfield Tire Company, New York, N. Y. For Resilient Vehicle Tires Composed in Whole or in Part of Rubber.

DANDEE—No. 152,62. Frank H. Binninger, Cleveland, Ohio. For Tire-Tube Patches.

Picture of Brooklyn Bridge with large tire in center of span within rectangular frame—No. 151,914. Hudson Tire Co. Inc., Newark, N. J. For Rubber Tires.

BEAR at top of a tire and "It's a Bear for Wear" on scroll below—No. 148,694. Sam Bretch Wholesale Specialties, Oklahoma, Okla. For Rubber Inner Tubes for Automobile Tires.

LEECHTITE—No. 153,955. Rubber and Cements, Incorporated, Chicago, Ill. For Combination Cement (for Sticking Together Leather Products and Rubber Products); Heel Cement, Folding Cement, Utility-Patch Cement, Automobile Cement, Leather Cement, Cut-Healer Cement, Thread-Filler Cement, Wood-Rim Cement, Puncture-Proof-Tire Solution Cement, Repair Gum Cement, Hard Tire Cement, and Gutta-Percha Cement.

TIME TO RE-TIRE?—No. 147,611. The Fisk Rubber Company, Chicopee Falls, Mass. For Rubber Tires, Both Pneumatic and Solid; Rubber Tubes—Namely, Inner Tubes for Pneumatic Tires and Accessories for Rubber Tires—Namely, Flaps and Reliners.

REDEX on oval-shaped device—No. 122,786. Rubber Products and Machinery Company, Los Angeles, Calif. For Tire Patches, Tire Reliners, Tire Shoes and Tire-Vulcanizing Kits.

BATES—No. 148,704. A. J. Bates Company, Webster, Mass. For Shoes and Slippers Made of Leather, Rubber, Fabric, Leather and Fabric, Leather and Rubber, and Rubber and Fabrics.

SHOES OF THE HOUR—No. 153,383. Wolock & Bauer, Chicago, Ill. For Leather, Rubber, Fabric, and Combination Shoes.

H. I. as monogram on shield device—No. 156,485. The General Tire and Rubber Company, Akron, Ohio. For Shoe Soles and Heels Made of or Containing Rubber.

OPTIMUS—No. 145,072. Lord & Taylor, New York, N. Y. For Leather Shoes and Shoes of Leather and Rubber.

SHI-NUP with the "h" elongated and a sunburst.—No. 153,230. Shi-nup Products Company, Racine, Wis. For Cleansing Preparations for Cleaning and Renewing the Luster of Rubber and Ivory Goods, and Woodwork etc.

INCA below Indian head within circle—No. 124,403. Egon Hassinger, Barcelona, Spain. For Steel pens, Lead Pencils and Rubber Erasers.